Technical Guide

Plasma
(GPH10DU Chassis)
Troubleshooting Handbook

Model : **TH-42PX75U**
TH-50PX75U
TH-42PX77U
TH-50PX77U

Panasonic Services Company

National Training

Prepared by
Panasonic Service and Technology Company
National Training

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Table of Contents

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Introduction

<Introduction>

1. Basic concept of how to determine the defective board

1) Verification of voltages

Normally, when there is a power problem, shutdown occurs immediately.

So, to resolve a power problem, voltage checks are necessary before shutdown.

2) Check if the power comes up after disconnecting the suspected board.

If power comes up (*) after disconnecting a board, the board is defective.

(*) "Power comes up" equals "no shutdown".

2. Troubleshooting Video and Audio problems

3. Examples of video problems

4. Adjustment after PCB exchange

1) After exchanging the following boards, voltage adjustment is required.

P board, SC board, SS board => Please refer to the "Service Manual".

Troubleshooting Shutdown Problems

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Power LED's Response to Shutdown Operation

<LED Blinking timing>

Once

3.0sec (interval)

Light

No Light

<Check point>
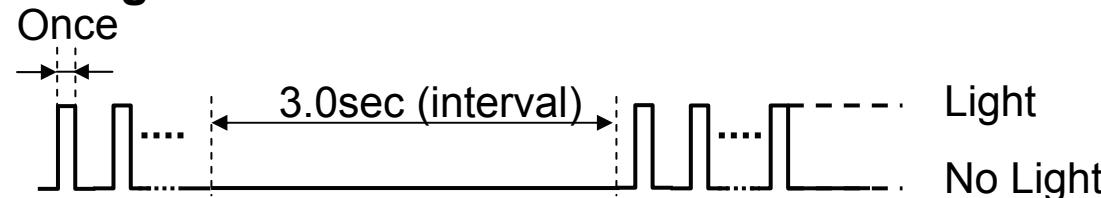
LED Blinking times	Contents	Check Point
1	STB5V sense time out	A Board
2	15V line abnormality	D Board (15V SOS)
3	3.3V line abnormality	D Board (3.3V SOS)
4	Power Supply abnormality	P Board (Power SOS)
5	5V line abnormality	D Board (5V SOS)
6	Scan Driver (1) abnormality/DRV_RST	SC,SU,SD Board (SC Energy recovery circuit) C and D Boards Connections
7	Scan Driver (2) abnormality	SC,SU,SD Board (SC Floating voltage area)
8	Sustain Driver abnormality	SS Board (SS Energy recovery circuit)/Panel
9	Panel Status abnormality	D Board (Panel Status DET)
10	REG. voltage abnormality	A Board (A SOS, Tuner SOS)/SC/SS
12	Voltage for sound abnormality	A Board (Sound SOS), C boards connections

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LED blinks 1 time

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board
Communication Error	A Board

Warning: Disconnect AC Power prior to making any disconnection or connection.

<How to find the defective boards>

A5, A6, and A7 location

The A board is defective.
To confirm this, unplug the TV and disconnect connectors A5, A6, and A7 from the A board.
The TV should turn on automatically and display a white screen.

A7 A6 A5

Note: CN = Connector

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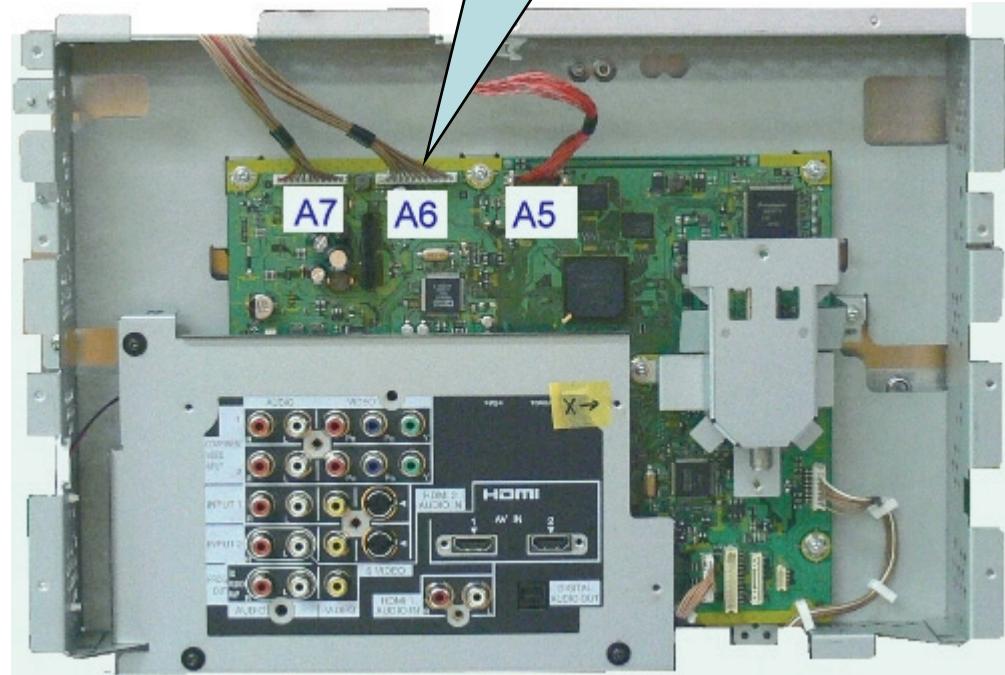
LED blinks 2 times

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board (Possibility)
15V down SOS	P, D, A, SC, SS Board (P > A, D, SC, SS)

Warning: Disconnect AC Power prior to making any disconnection or connection.

(*1) = The reference number of the sustain data connector is different in some of the models:

TH-42PX75U = SS23
TH-42PX77U = SS23
TH-50PX75U = SS33
TH-50PX77U = SS33

<How to find the defective boards>

No ← Disconnect CN A5, A6, and A7 on the A board. Does the TV turn on by itself with a white screen? → Yes → **A** Board

Unplug the TV, reconnect CN A5, A6, and A7 and disconnect CN SC20 and SC2. To isolate the SC board.

Turn the unit on. Does the power LED stay on? → Yes → **SC** Board
No ↓

Unplug the TV, reconnect SC20 and SC2 and disconnect CN P12, SS11, and SS23 (*1) to isolate the SS board. Remove the jumper at CN SS34 and install it across pin 8 and 10 of connector P12.

Turn the unit on. Does the power LED stay on? → Yes → **SS** Board
No

Unplug the TV, Reconnect CN P12, SS11, And SS23 (*1). Turn the unit on. Is there 15V output at CN P25 pin 1 or 2 before the TV shuts down ? → No →
Yes → **D** Board

D Board

Unplug the TV. Disconnect CN P25. Is pin 1 or 2 of the CN P25 shorted to GND? → No → **D** Board
Yes ↓
P Board

Note: CN = Connector

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board
3.3V down SOS	D Board

Warning: Disconnect AC Power prior to making any disconnection or connection.

<How to find the defective boards>

The D board is defective.

Note: CN = Connector

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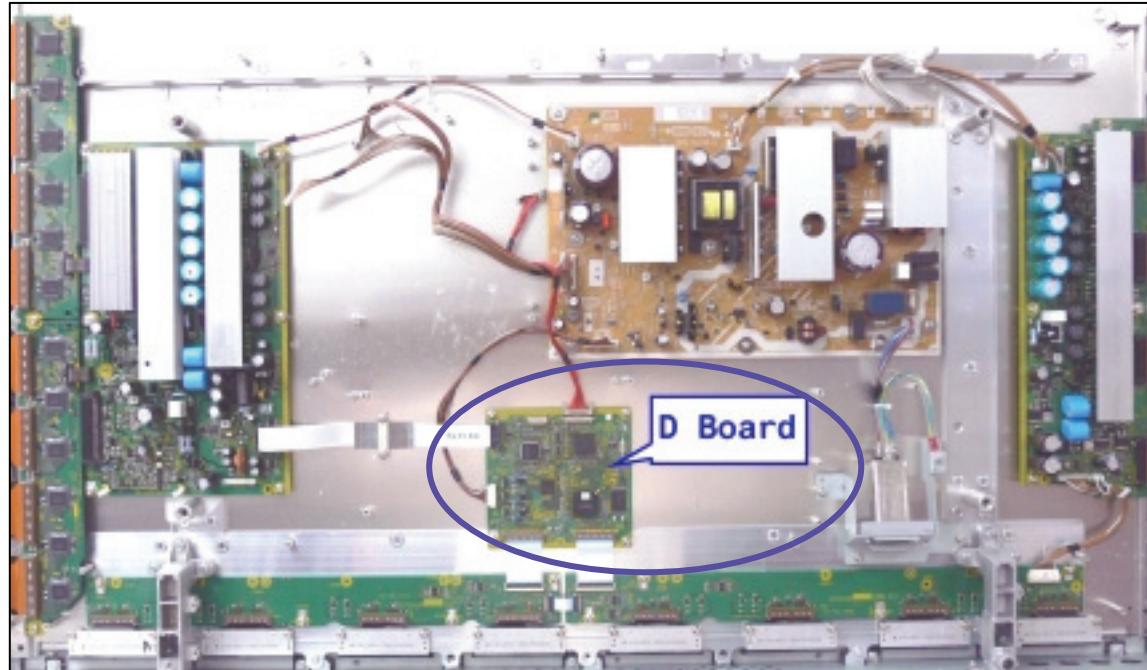
LED blinks 4 times

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board
Power Supply SOS	Primarily P board or possible D board

Warning: Disconnect AC Power prior to making any disconnection or connection.

<How to find the defective boards>

Turn the unit on. Is pin 12 of CN P25 of the P board high before shutdown?

No → D Board

Yes ↓ P Board

Note: CN = Connector

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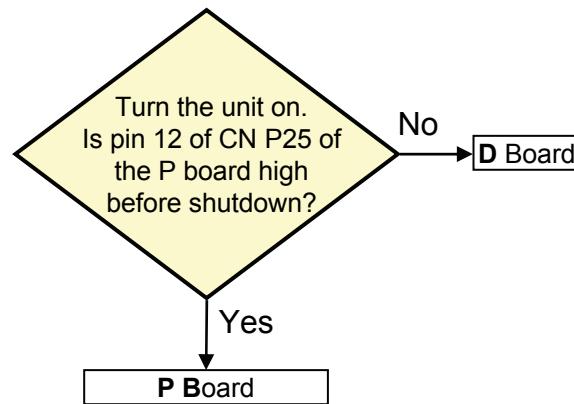
LED blinks 5 times (Quick Troubleshooting)

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board
5V SOS	D, P, C, SC, SS board or Panel (DDIC)*1

Warning: Disconnect AC Power prior to making any disconnection or connection.

(*1) = Data Driver IC

<How to find the defective boards>

Disconnect CN P12
of the power supply board. Measure the resistance of pin 1 of the lead cable to ground.

↓

Is there a short to ground?

No → Proceed to more extensive troubleshooting of the pages that follow.

Yes

↓

Panel

Note: CN = Connector

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LED blinks 5 times

\<Trouble Mode and Defective Board\>

Trouble Mode	Defective Board
5V SOS	D, P, C, SC, SS board or Panel

Warning: Disconnect AC Power prior to making any disconnection or connection.

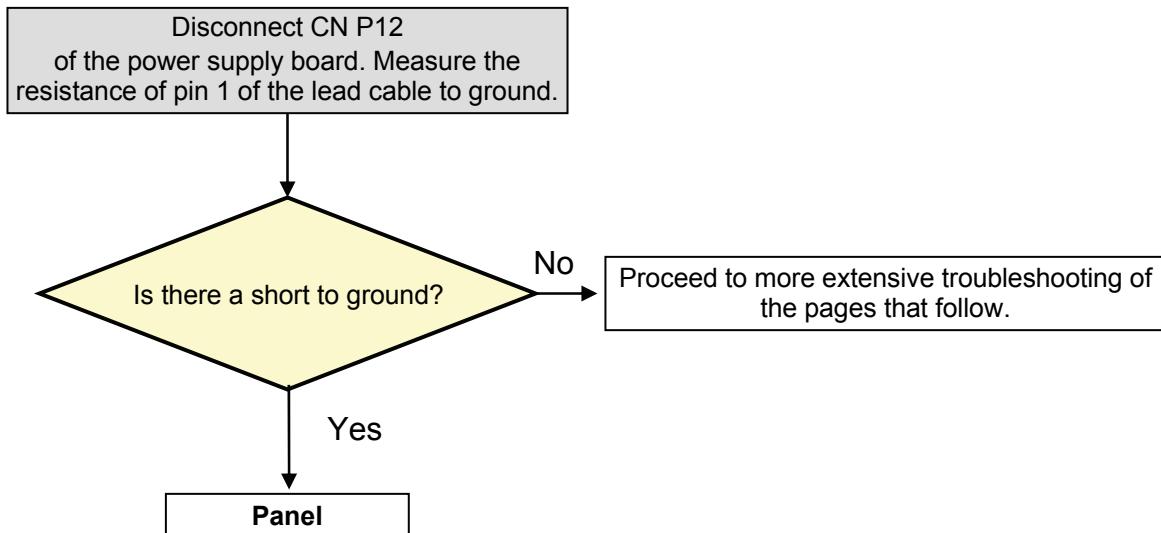**(*1)** = The reference number of the sustain data connector is different in some of the models:

TH-42PX75U = SS23
TH-42PX77U = SS23
TH-50PX75U = SS33
TH-50PX77U = SS33

\<How to find the defective boards\>

Yes

Disconnect CN SC20 on the SC board. Turn on the unit. Does the power LED stay on?

No

Connect CN SC20. Disconnect CN SS23 (*1) on the SS board. Turn on the unit. Does the power LED Stay on?

No

SC Board

Yes

SS Board

Connect SS23 (*1). Disconnect CN D31and D32 on the D board. Is pin 5of CN P25 shorted to GND?

No

Connect D31 and leave D32 disconnected. Is pin 5 of CN P25 shorted to GND?

No

Disconnect D31. Connect D32. Is pin 5 CN P25 shorted to GND?

No

P Board

Yes

Yes

Yes

Yes

Disconnect CN P25. Is pin 5 of the **socket** P25 shorted to GND?

No

Disconnect CB1-CB4. Is pin 5 of CN P25 shorted to GND?

No

Disconnect CB5-CB8. Is pin 5 of CN P25 shorted to GND?

No

P Board

D Board

Yes

C1 Board

Panel

Yes

C2 Board

Panel

Note: CN = Connector

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LED blinks 6 times

\<Trouble Mode and Defective Board\>

Trouble Mode	Defective Board (Possibility)
SC Energy Recovery SOS	SC, SS, D, P Board (SC > SS, D, P)

Warning: Disconnect AC Power prior to making any disconnection or connection.

\<How to find the defective boards\>

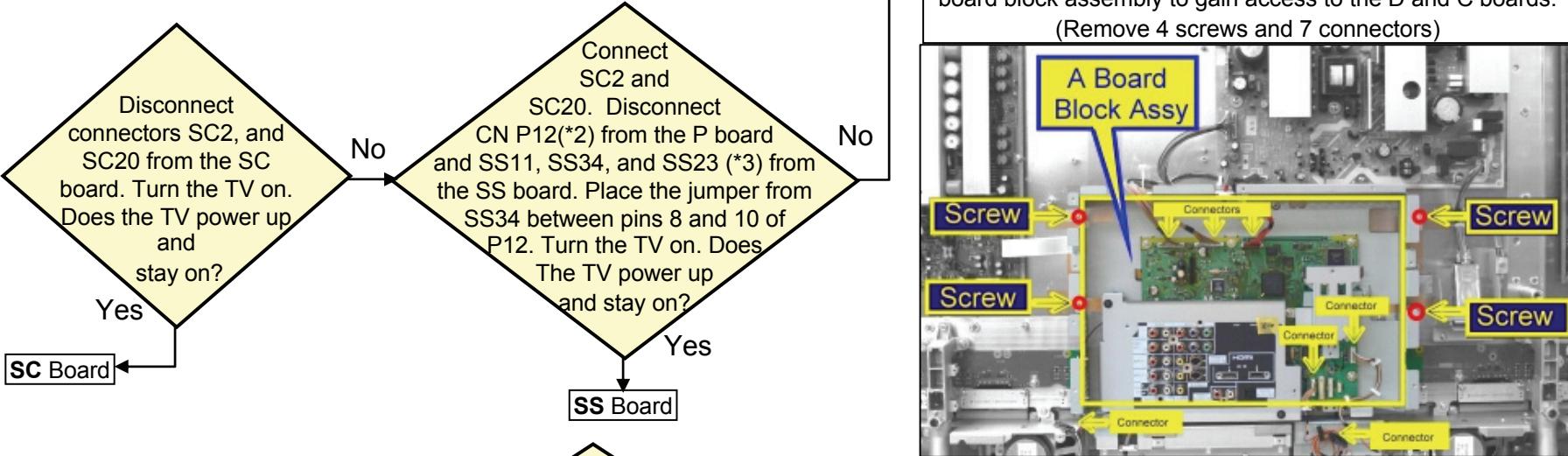Disconnect connectors SC2, and SC20 from the SC board. Turn the TV on. Does the TV power up and stay on?

No →

Connect SC2 and SC20. Disconnect CN P12(*2) from the P board and SS11, SS34, and SS23 (*3) from the SS board. Place the jumper from SS34 between pins 8 and 10 of P12. Turn the TV on. Does The TV power up and stay on?

No →

Connect CN P12, SS11, SS34, and SS23(*3). Remove the A board block assembly to gain access to the D and C boards. (Remove 4 screws and 7 connectors)

Yes ↓

SC Board

Yes ↓

SS Board

Yes

Does the P board output 15V at pin 7 of P7 and Vsus at pin 1 of P2 before the TV shuts down?

Ground the base of Q302 (Fig. 1 next pg) on the D board and turn the power on

No → Does the TV stay on? → Yes

Reseat the ribbon cables between the D and the C boards. Also reseat the cables between the C boards. (See figure 2 on the next page

(*3) = The reference number of the sustain data connector is different in some of the models:

TH-42PX75U = SS23
TH-42PX77U = SS23
TH-50PX75U = SS33
TH-50PX77U = SS33

D Board

No ↓

P Board

Note: CN = Connector

(*1) VSUS about 180V (Accurate voltage is provided on the Panel Label)

CAUTION: Before connecting P2 or P11, discharge is necessary to prevent potential shock caused by VSUS.

(*2) Place a jumper across pin 8 and 10 of connector P12. The unit will not enter the standby mode without the jumper.

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<Trouble Mode and Defective Board>

Trouble Mode	Defective Board (Possibility)
SC Energy Recovery SOS	SC, SS, D, P Board (SC > SS, D, P)

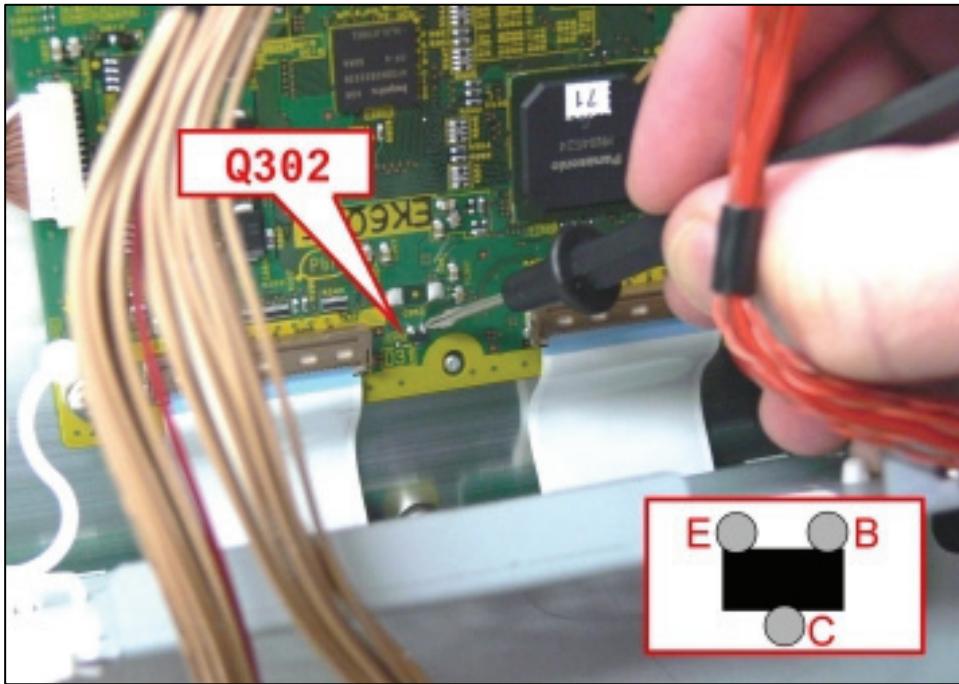**Warning:** Disconnect AC Power prior to making any disconnection or connection.
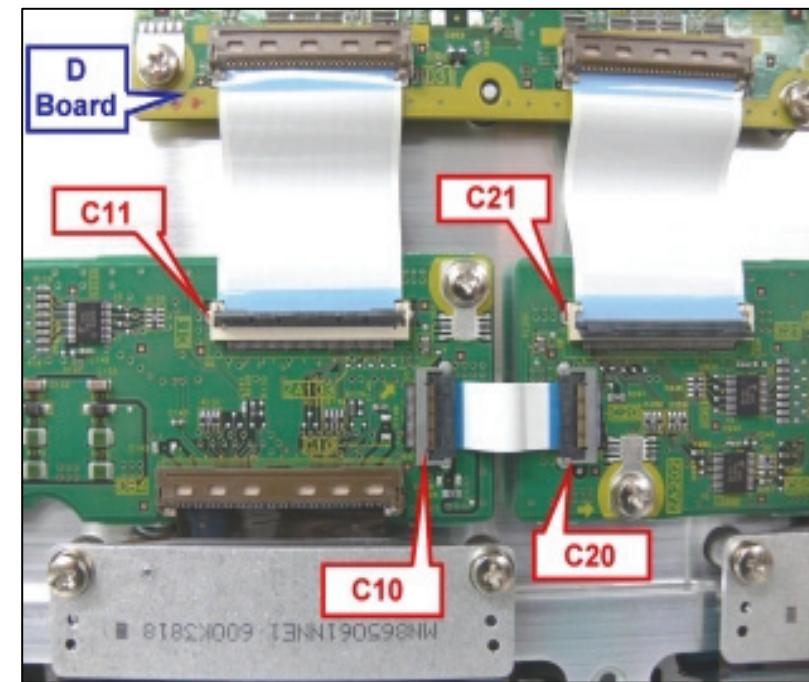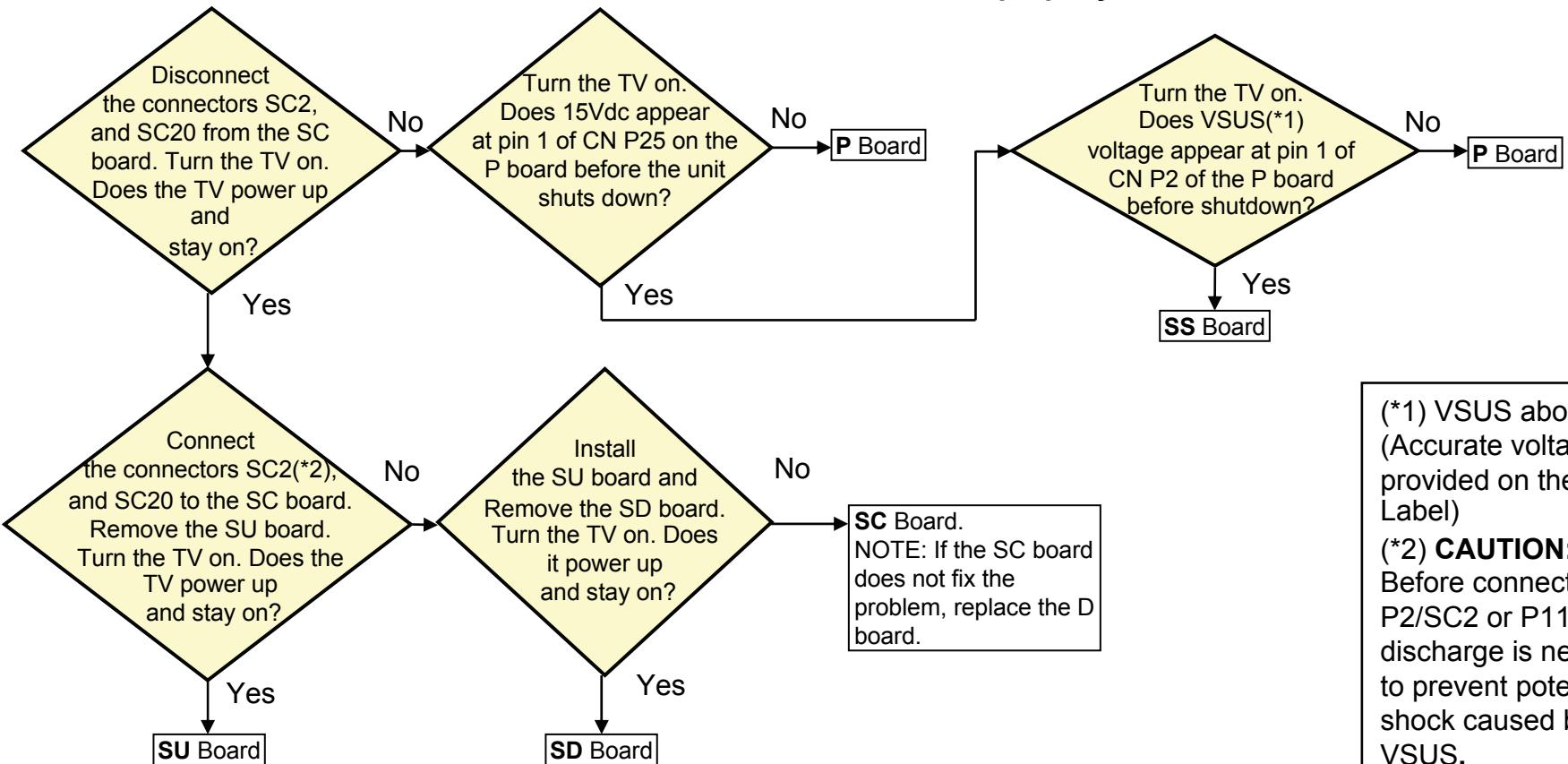

Figure 1

Figure 2

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LED blinks 7 times

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board (possibility)
SC Floating voltage SOS	SC, SU, SD, P board (SC,SU,SD>D,P)

Warning: Disconnect AC Power prior to making any disconnection or connection.

<How to find the defective boards>

Make sure the connectors P2/SC2, SC20/D20 are not loose and seated properly.

Disconnect the connectors SC2, and SC20 from the SC board. Turn the TV on. Does the TV power up and stay on?

— No → Turn the TV on. Does 15Vdc appear at pin 1 of CN P25 on the P board before the unit shuts down?

— No → **P** Board

— Yes → Turn the TV on. Does VSUS(*1) voltage appear at pin 1 of CN P2 of the P board before shutdown?

— No → **P** Board

— Yes → **SS** Board

— Yes (from first) → Connect the connectors SC2(*2), and SC20 to the SC board. Remove the SU board. Turn the TV on. Does the TV power up and stay on?

— No → Install the SU board and Remove the SD board. Turn the TV on. Does it power up and stay on?

— No → **SC** Board.
NOTE: If the SC board does not fix the problem, replace the D board.

— Yes → **SU** Board

— Yes → **SD** Board

(*1) VSUS about 180V (Accurate voltage is provided on the Panel Label)

(*2) **CAUTION:** Before connecting P2/SC2 or P11/SS11, discharge is necessary to prevent potential shock caused by VSUS.
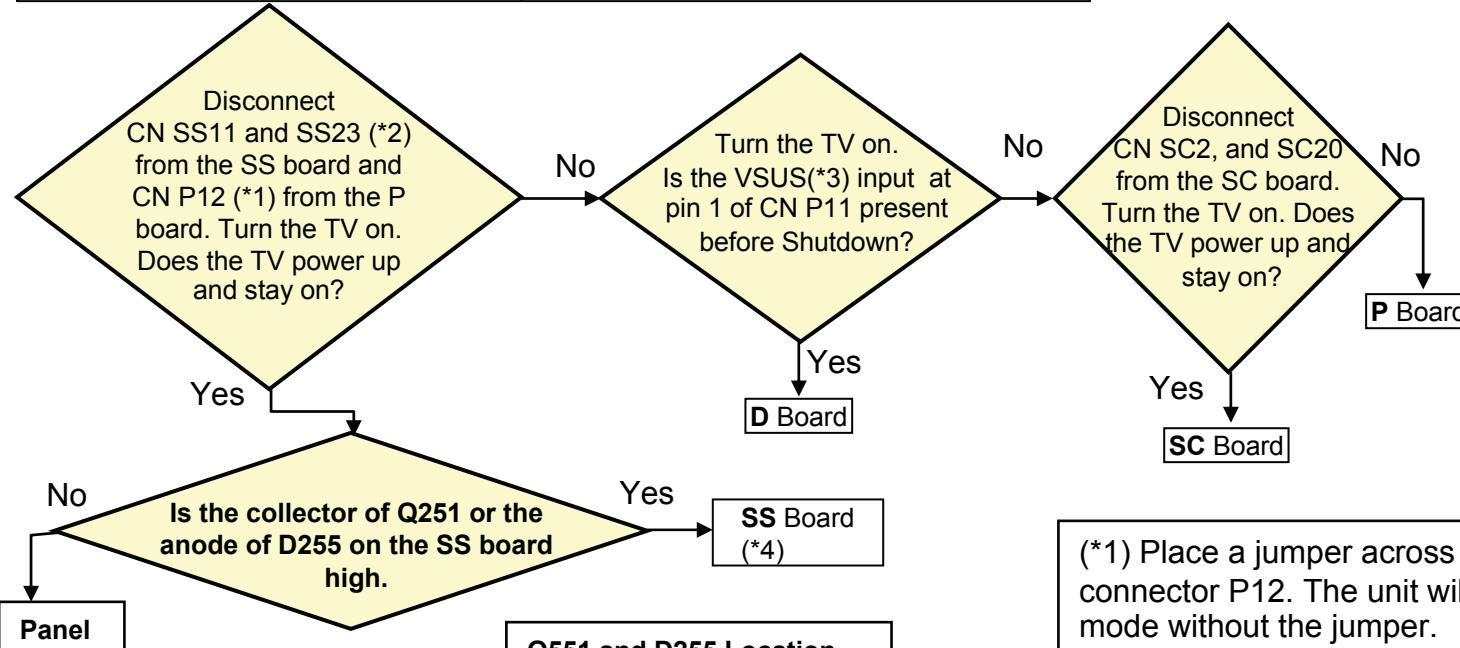
Note: CN = Connector

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LED blinks 8 times

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board (possibility)
SS Energy recovery SOS/Panel	SS, SC, D, P board (SS>SC,D,P)/PDP

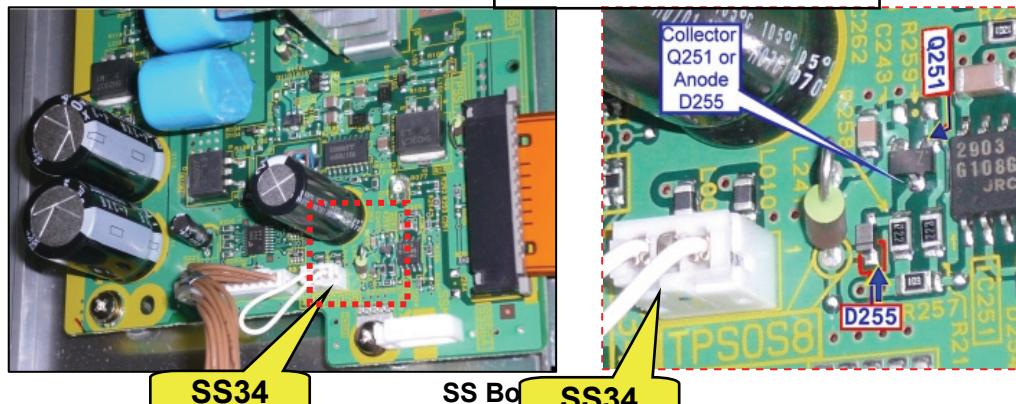**Warning:** Disconnect AC Power prior to making any disconnection or connection.

Disconnect CN SS11 and SS23 (*2) from the SS board and CN P12 (*1) from the P board. Turn the TV on. Does the TV power up and stay on?

No →

Turn the TV on. Is the VSUS(*3) input at pin 1 of CN P11 present before Shutdown?

No →

Disconnect CN SC2, and SC20 from the SC board. Turn the TV on. Does the TV power up and stay on?

No → P Board

(*2) = The reference number of the sustain data connector is different in some of the models:
TH-42PX75U = SS23
TH-42PX77U = SS23
TH-50PX75U = SS33
TH-50PX77U = SS33

Yes (VSUS) → **D** Board

Yes (SC) → **SC** Board

Yes (SS) →

No ← Is the collector of Q251 or the anode of D255 on the SS board high. → **Yes** → **SS** Board (*4)

No ↓ Panel

Q551 and D255 Location.

Collector Q251 or Anode D255

SS34   SS Bo...   **SS34**

(*1) Place a jumper across pin 8 and 10 of connector P12. The unit will not enter the standby mode without the jumper.

(*3) VSUS about 180V (Accurate voltage is written on the Panel Label of the chassis)
CAUTION : To avoid potential shock from the VSUS voltage, discharge the connectors SC2 or SS11 before reconnecting them into their respective socket.

(*4) If the power LED continues to blink after replacing the SS board, change the D board.

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LED blinks 9 times

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board
Panel Status	D Board

Warning: Disconnect AC Power prior to making any disconnection or connection.

<How to find the defective boards>

In this case, only the D board is defective.

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<Trouble Mode and Defective Board>

Trouble Mode	Defective Board
SUB 5V SOS, Main 3.3V SOS DTV 9V SOS, Tuner Power SOS	P, A Board

Warning: Disconnect AC Power prior to making any disconnection or connection.

<How to find the defective board(s)>

Disconnect connectors A5, A6, and A7 on the A board and plug the TV into the AC line.

Does the TV turn on by itself with a white screen and the power LED is off?

Yes

No

P Board.

A Board

Connectors A7, A6, and A5 location.

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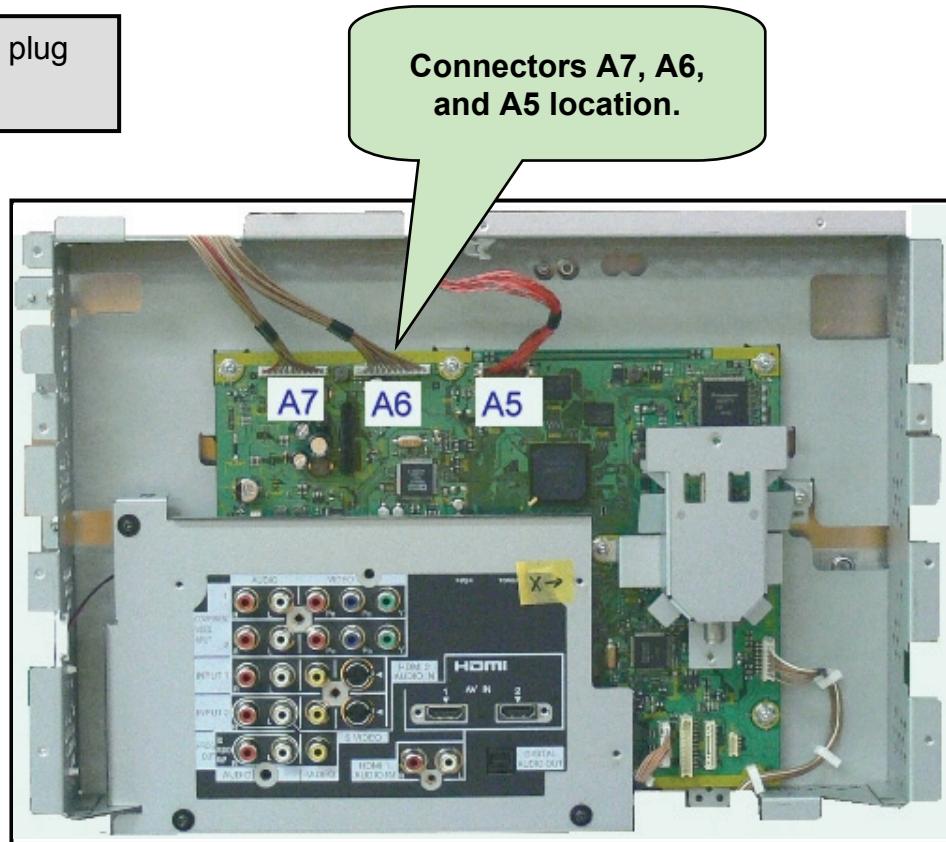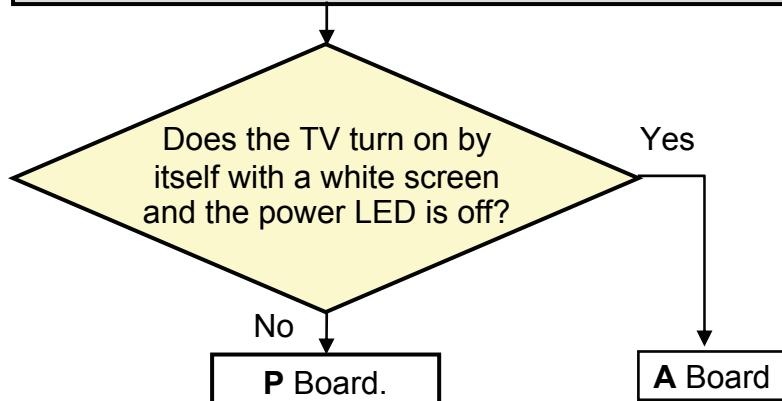
LED blinks 10 times after pressing the power button

<Trouble Mode and Defective Board>

Trouble Mode	Defective Board
SUB 5V SOS, Main 3.3V SOS DTV 9V SOS, Tuner Power SOS	P, A, SC,SS Board

Warning: Disconnect AC Power prior to making any disconnection or connection.
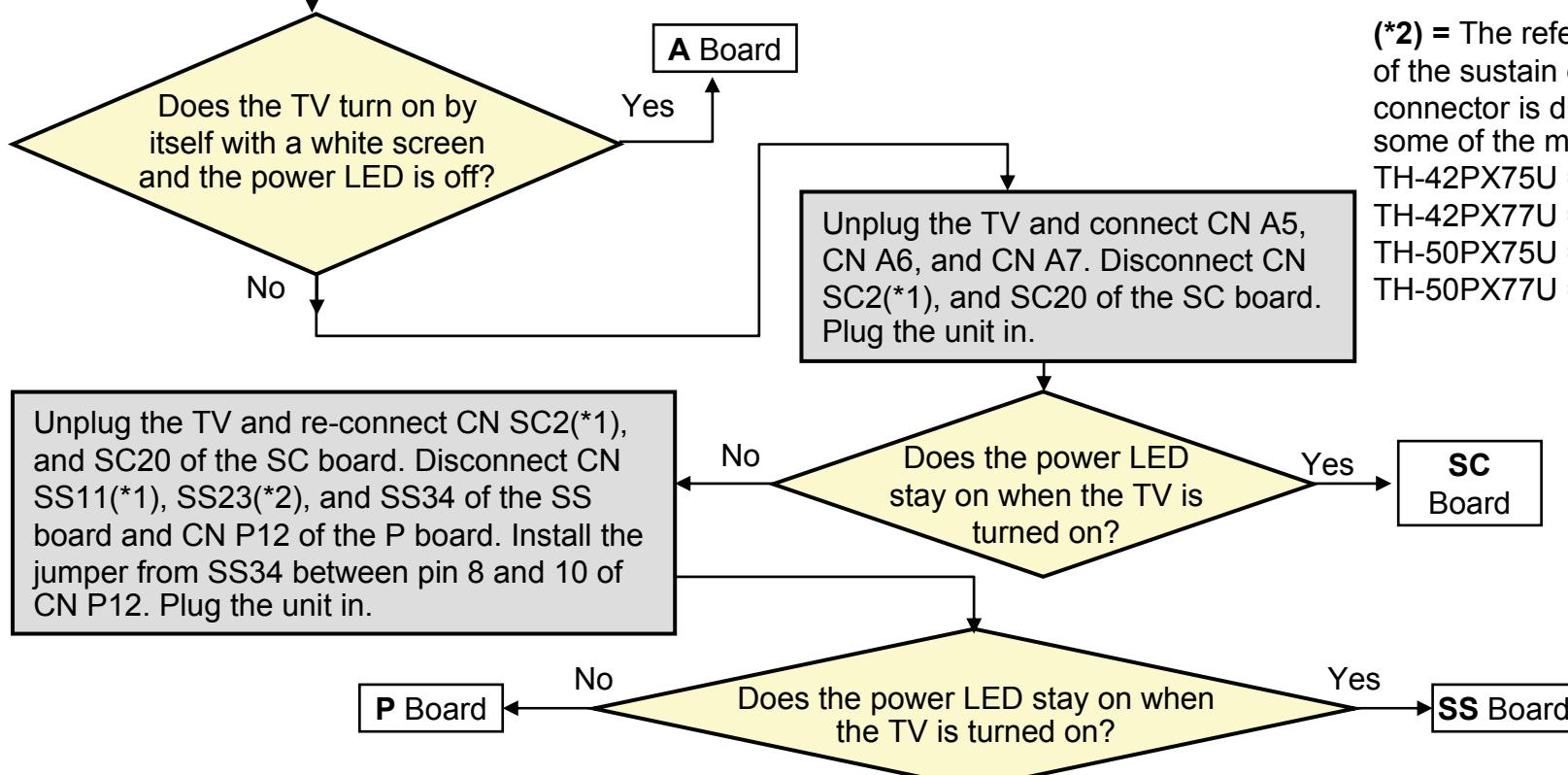
(*1) = To avoid potential shock from the VSUS voltage, discharge the connectors SC2 or SS11 before reconnecting them into their respective socket.

(*2) = The reference number of the sustain data connector is different in some of the models:
TH-42PX75U = SS23
TH-42PX77U = SS23
TH-50PX75U = SS33
TH-50PX77U = SS33

<How to find the defective board(s)>

Disconnect connectors A5, A6, and A7 on the A board and plug the TV into the AC line.

Does the TV turn on by itself with a white screen and the power LED is off?

→ Yes → **A** Board

No ↓

Unplug the TV and connect CN A5, CN A6, and CN A7. Disconnect CN SC2(*1), and SC20 of the SC board. Plug the unit in.

Does the power LED stay on when the TV is turned on?

→ Yes → **SC** Board

No ←

Unplug the TV and re-connect CN SC2(*1), and SC20 of the SC board. Disconnect CN SS11(*1), SS23(*2), and SS34 of the SS board and CN P12 of the P board. Install the jumper from SS34 between pin 8 and 10 of CN P12. Plug the unit in.

Does the power LED stay on when the TV is turned on?

→ Yes → **SS** Board

No → **P** Board

Note: CN = Connector

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<Trouble Mode and Defective Board>

Trouble Mode	Defective Board (Possibility)
Sound SOS	Speakers, A Board

<How to find the defective boards>

(*2) = Remove the jumper at CN SS34 and install it across pin 8 and 10 of connector P12.

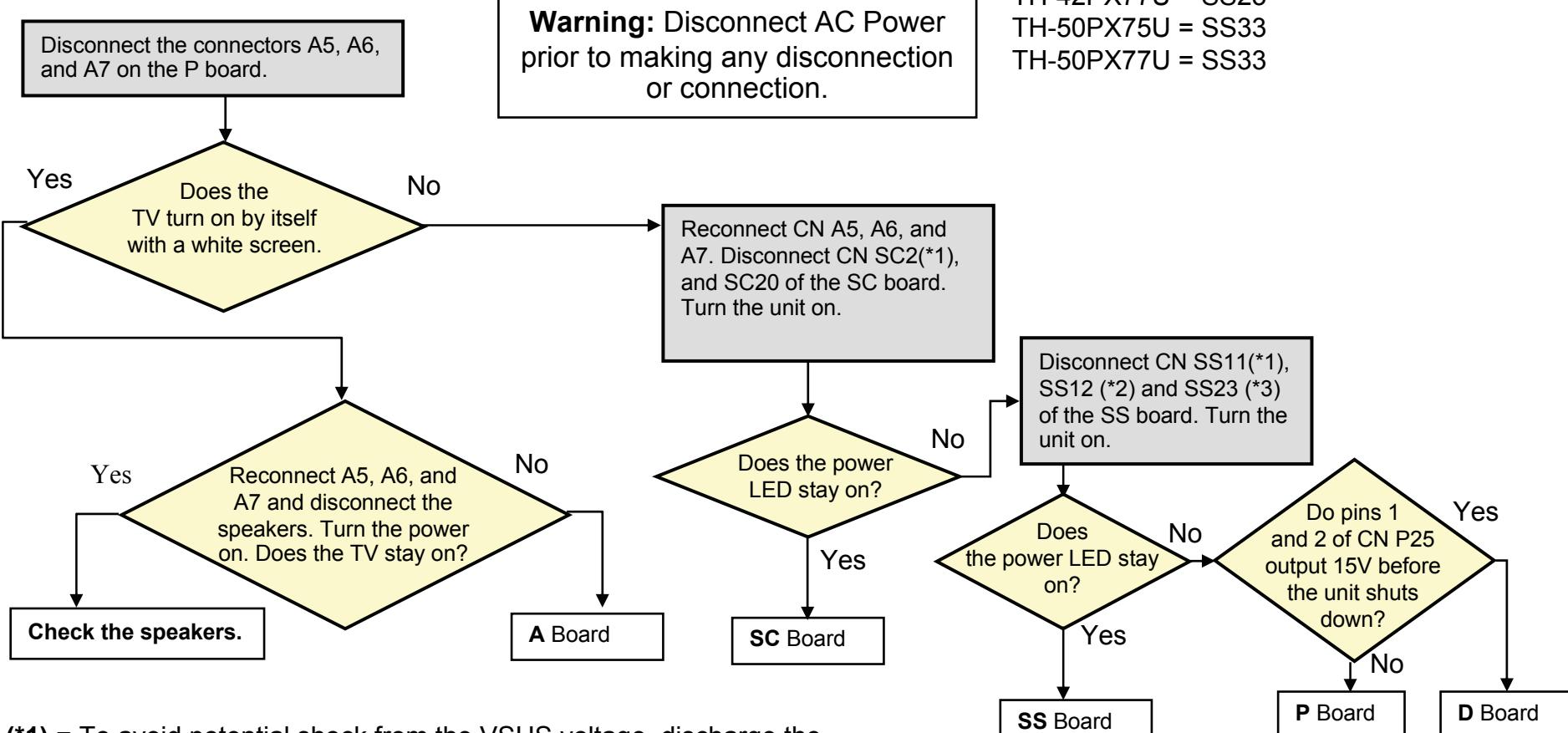**(*3) =** The reference number of the sustain data connector is different in some of the models:
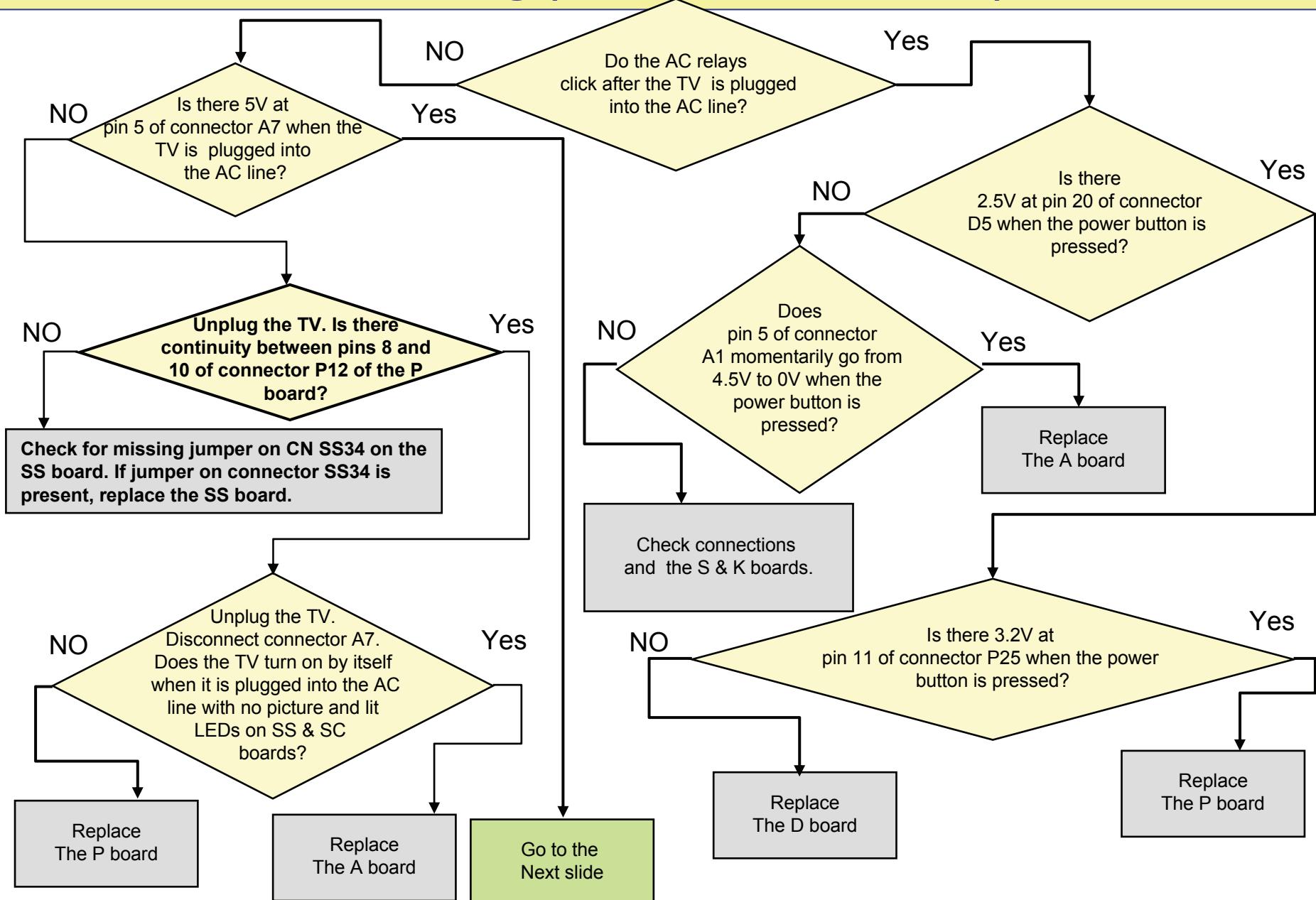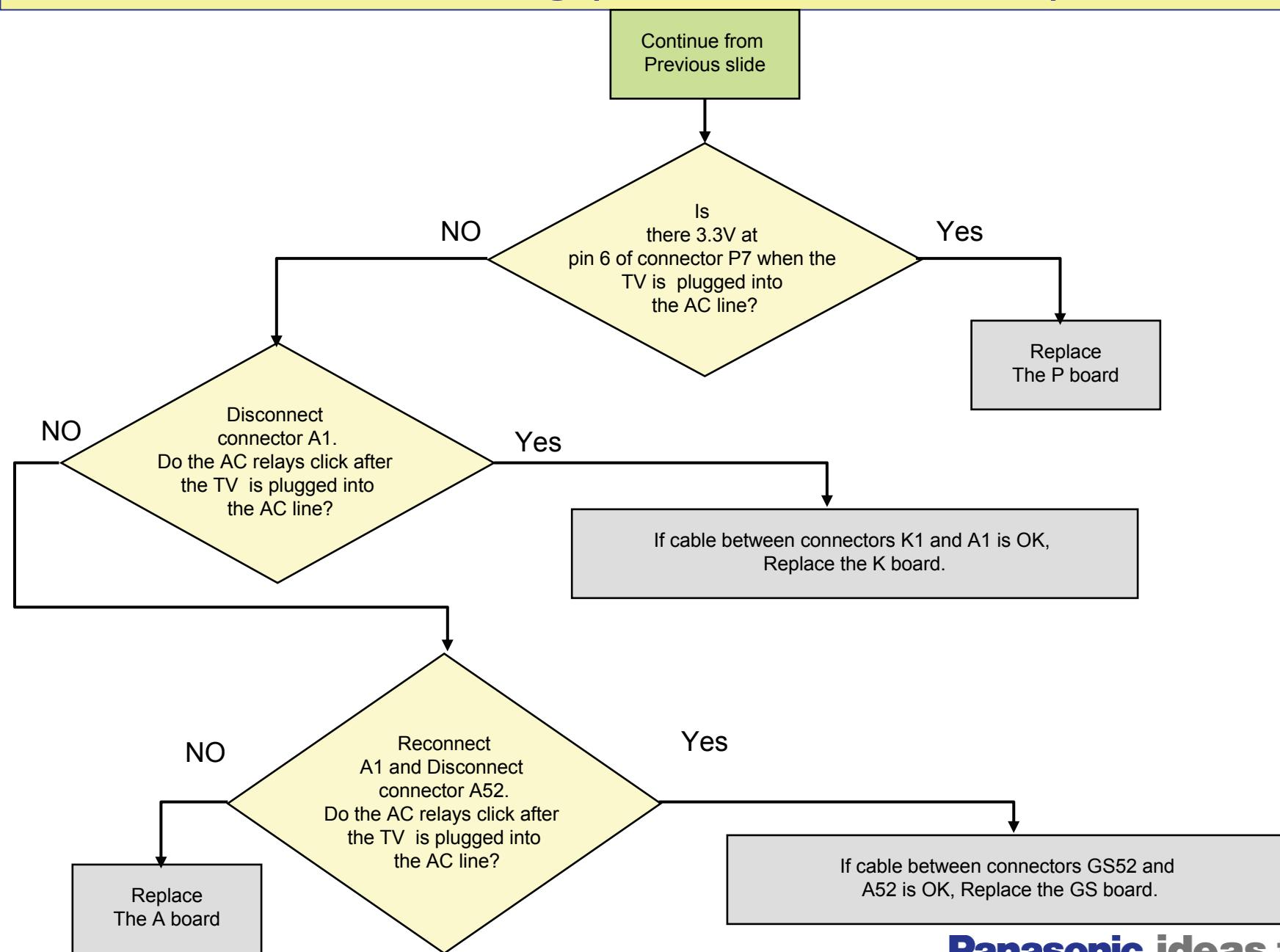
TH-42PX75U = SS23
TH-42PX77U = SS23
TH-50PX75U = SS33
TH-50PX77U = SS33

Disconnect the connectors A5, A6, and A7 on the P board.

Warning: Disconnect AC Power prior to making any disconnection or connection.

Does the TV turn on by itself with a white screen.
Yes / No

Reconnect CN A5, A6, and A7. Disconnect CN SC2(*1), and SC20 of the SC board. Turn the unit on.

Disconnect CN SS11(*1), SS12 (*2) and SS23 (*3) of the SS board. Turn the unit on.

Reconnect A5, A6, and A7 and disconnect the speakers. Turn the power on. Does the TV stay on?
Yes / No

Does the power LED stay on?
No / Yes

Does the power LED stay on?
No / Yes

Do pins 1 and 2 of CN P25 output 15V before the unit shuts down?
Yes / No

Check the speakers.

A Board

SC Board

SS Board

P Board

D Board

(*1) = To avoid potential shock from the VSUS voltage, discharge the connectors SC2 or SS11 before reconnecting them into their respective socket.

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Troubleshooting (No Power/Dead Unit) Part 1

Do the AC relays click after the TV is plugged into the AC line?

NO → Is there 5V at pin 5 of connector A7 when the TV is plugged into the AC line?

Yes →

NO → Unplug the TV. Is there continuity between pins 8 and 10 of connector P12 of the P board?

Yes →

NO → **Check for missing jumper on CN SS34 on the SS board. If jumper on connector SS34 is present, replace the SS board.**

Unplug the TV. Disconnect connector A7. Does the TV turn on by itself when it is plugged into the AC line with no picture and lit LEDs on SS & SC boards?

NO → Replace The P board

Yes → Replace The A board

Go to the Next slide

Yes → Is there 2.5V at pin 20 of connector D5 when the power button is pressed?

NO → Does pin 5 of connector A1 momentarily go from 4.5V to 0V when the power button is pressed?

Yes →

NO → Check connections and the S & K boards.

Yes → Replace The A board

Is there 3.2V at pin 11 of connector P25 when the power button is pressed?

NO → Replace The D board

Yes → Replace The P board

Troubleshooting (No Power/Dead Unit) Part 2

Continue from Previous slide

Is there 3.3V at pin 6 of connector P7 when the TV is plugged into the AC line?

NO

Yes

Replace The P board

Disconnect connector A1. Do the AC relays click after the TV is plugged into the AC line?

NO

Yes

If cable between connectors K1 and A1 is OK, Replace the K board.

Reconnect A1 and Disconnect connector A52. Do the AC relays click after the TV is plugged into the AC line?

NO

Yes

Replace The A board

If cable between connectors GS52 and A52 is OK, Replace the GS board.

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No Picture from one or all inputs (OSD and Sound OK)

\<Symptom\>
No Picture from one or all inputs (Sound OK)
\<Models\>
All models

Warning: Disconnect AC Power prior to making any disconnection or connection.

\<How to determine the defective board\>

Is there no picture from all inputs?

No → **A** Board

Yes ↓

Note: Slow leakage from the panel causes "**no raster and buzz noise**"

Disconnect CN A5, Turn the unit on. Does a white picture appears? (*)

No → Panel discharge occurs?

No → Disconnect the SU Board from the SC board. Turn the unit on. Is there a picture at the lower half of the screen?

No → Connect the SU board. Disconnect the SD Board from the SC board. Turn the unit on. Is there a picture at the upper half of the screen?.

No → **SC** or **D** Board and possibly **Panel.**

Yes ↓ **A (1)**or **D (2)** Board

Yes ↓ **D** Board

Yes ↓ **SU** Board

Yes ↓ **SD** Board

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No Picture / No OSD

<Symptom>
No Picture at all
<Models>
All Models)

<How to determine the defective board>

Warning: Disconnect AC Power prior to making any disconnection or connection.

Is the On Screen Display information visible?

No

Yes

A Board

1. Unplug the unit from the wall outlet.
2. Disconnect the connector A5 from the A board.
3. Reconnect the unit to the wall outlet and wait for the TV to come on by itself.

Is the screen completely white?

Yes

No

A (1) or **D (2)** Board

Is there 75V (VDA) at pins 1 and 2 of the connector SS12?

Yes

No

Yes

P Board

Is the SC Board LED illuminated?

No

Yes

Is the SS Board LED illuminated?

Yes

D Board

SC Board

No

SS Board

Note: CN = Connector

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No Sound

<Symptom>
  No Audio

<How to determine the defective board>

Warning: Disconnect AC Power prior to making any disconnection or connection.

No ← Is there 15V at pin 1 of CN A6 on the A board? → Yes

Is there a sound waveform at pin 1 and 4 of CN A12 on the A board? → No → A board

Yes

Check the cable between A6 on the A board and P6 on the P board.

Check the speakers. (Make sure A12 is properly seated).

A12 A7 A6 A5

Note: CN = Connector

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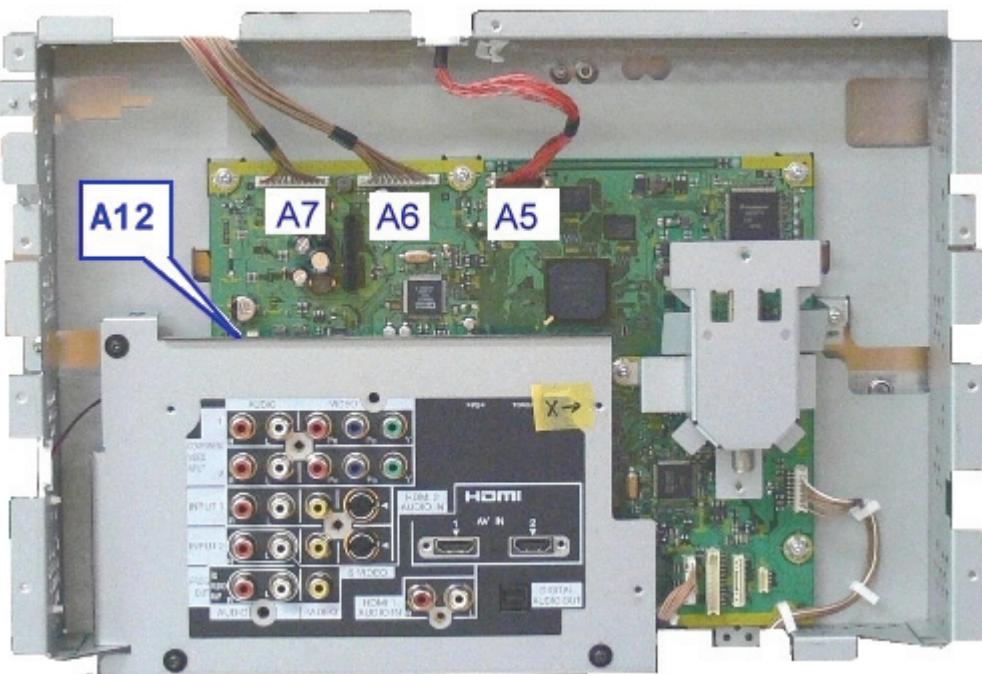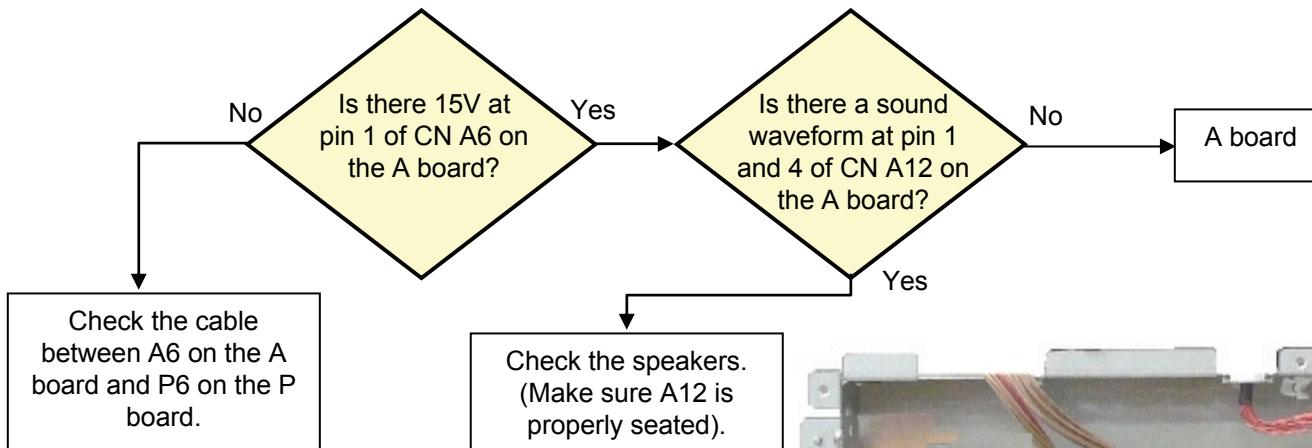
Troubleshooting for Picture Problems

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<Introduction>

1. There are two kinds of picture problem

1) Abnormal picture

2) No picture

2. Basic concept of determining the defective board

1) Which area is the symptom displayed on the screen?

  A. Part of the screen

  B. All over the screen

3. Adjustment after PCB exchange

1) After exchanging the following boards, voltage adjustment is required.

  P board, SC board, SS board => Please refer to "Service Manual".

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Diagnosis by Test Pattern When OSD is Available

<Purpose>
Picture problem such as "Picture Noise and or Vertical Line" displayed all over the screen is mainly caused by a defective D or A board. The "internal Test Pattern Generator" can help determine whether to replace the D or A board. The test patterns are created by the D board. Follow the steps below to confirm the operation of the D or A boards.

<Model>
All Models

<Symptom>
Picture Noise, Full Vertical Line

<Diagnosis>

Pattern	Defective Board
Abnormal	D Board
Normal	A Board (or D board)

<How to enter the Test Pattern>
1. While pressing "VOLUME-" button of the TV set, press "RECALL" button of the remote control three times within 3 seconds.
2. Push button "1" of the Remote Control several times to select the "AGING" setting.
3. Press the number "3" button or the number "4" button of the Remote Control to select the test pattern.

<Test Pattern (Normal)>

White (by A) → White (by D) → Red → Green → Blue / Ramp blue → Ramp white ← on/off Aging → Ramp red → Ramp green → 1% window → Color bar → A and B zone → Scroll

<Test Pattern (Abnormal)>
Example Picture
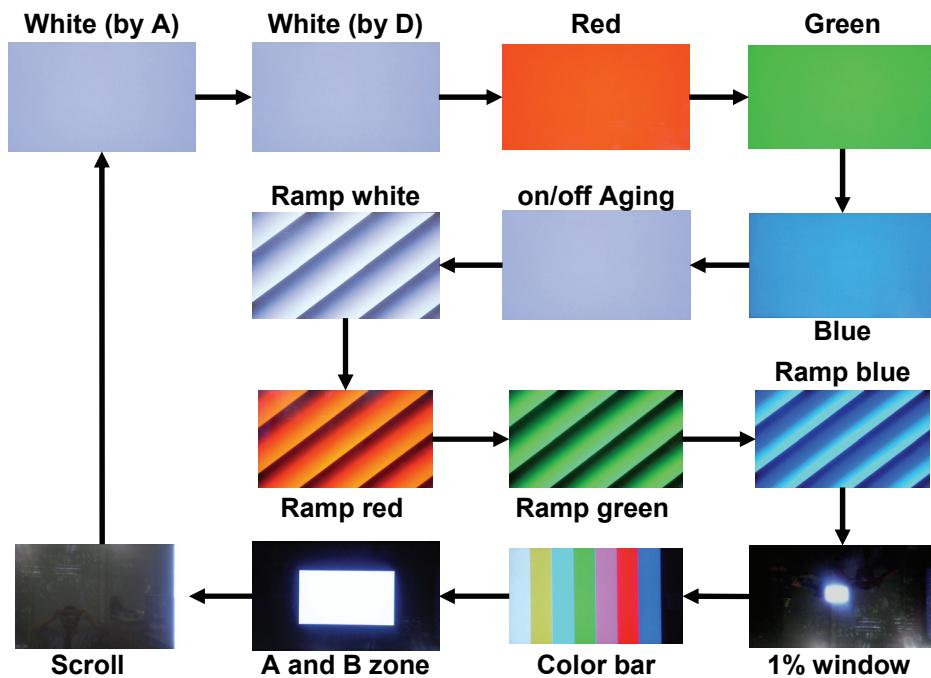
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Diagnosis by Removing the A5 Connector

<Purpose>

Symptom such as "No picture, No OSD, Sound OK" is mainly caused by a defective A or D board. The internal pattern generator cannot be accessed due to the loss of OSD. This method makes it possible to determine whether the A board or the D (SC,SS) is defective.

<Model>

2007 Models ONLY

<Symptom>

No picture (Sound OK)

<Diagnosis>

Connect the TV after removing A5 Connector

Pattern	Defective Board
White Picture	A Board (D board)
No Picture	D board (SC or SS)

<Position of A5 Connector>

<Block Diagram and Explanation>
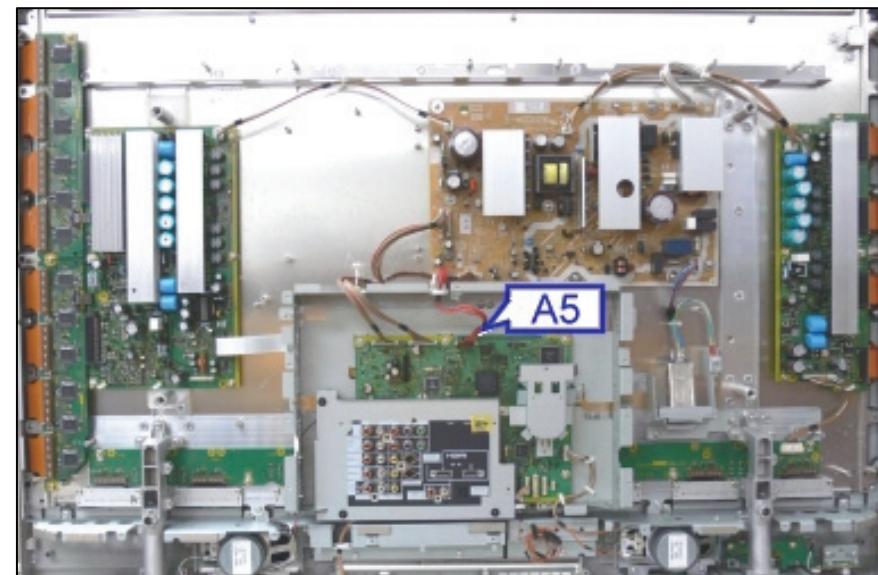
1. This white pattern is generated by IC9900 on D board.
2. When the TV is plugged in after disconnecting connector A5, it turns on automatically and a white picture is provided to the panel drive circuit.
 If the panel drive section of the unit is ok, a white picture is automatically displayed by the PDP.

VIDEO DATA

To C Board

A
IC1100
IC4510
MICRO PROCESSOR
HDMI I/F
Peaks Lite
IC8001
A5
LVDS
D5
D
IC9500
PICTURE OUTPUT
LVDS RECEIVER
IC9900
PLASMA AI
S.F. PROCESSOR
DATA DRIVER
White Picture
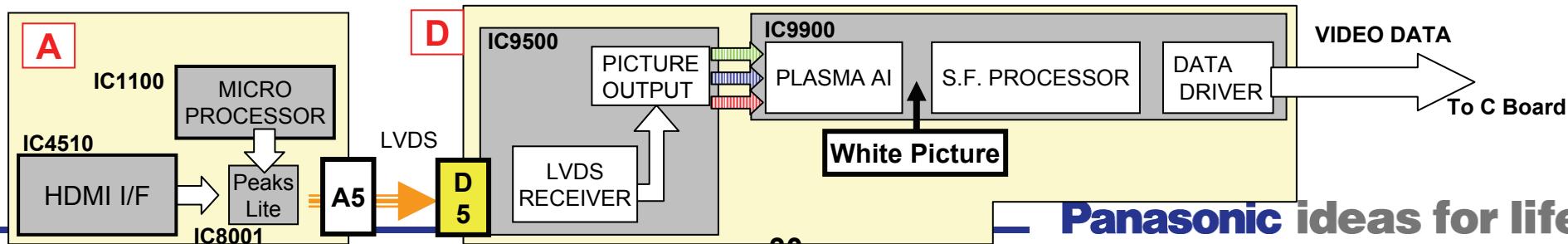
Troubleshooting for Picture Trouble

<How to determine the defective board>

Start

Where is the symptom displayed?

Upper or Lower half (from front view)

Some part of the screen

Upper half → **SU Board** (or D, or SC)

Lower half → **SD Board** (or D, or SC)

Both area → **SS Board** (or D)

Left or Right half (from front view)

Right half → **D Board** (or C1, or Panel)

Left half → **D Board** (or C2, or Panel)

All over the screen

Other case

Internal Generator Pattern is Normally Displayed?

No → D Board (or SC) Panel (*Note)

Yes → A Board (or D)

*Note :Panel gas leakage

Because of a very small crack in the panel, gas leakage will start.
In this picture, gas leakage started at the left top corner.
Finally, gas leakage will lead to the symptom **"No picture with buzz noise".**

Diagnosis for Picture Problem (All Over the Screen)

<Symptom>
Abnormal Color, Vertical Line, Sync Error, Noise Picture

<Model>
All Models

<Sample Picture>

<Possible Cause>

A Board, D Board, SC Board, SU Board, SD Board

<Block Diagram>

e.g. TH-42PX75U

Panasonic ideas for life
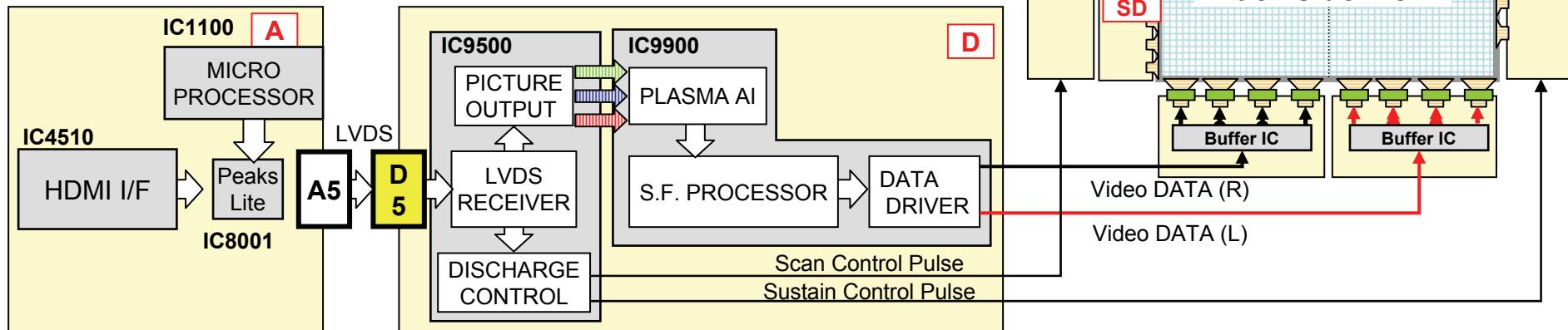
Diagnosis for Picture Problem (All Over the Screen)

<Diagnosis (1)>

Enter the "Internal Test Pattern Generator"
                or
Is the screen "White", after disconnecting the connector "A5"?

<Result>

 Test Pattern **OK** or White Picture **displayed**

<Cause>
A (and possibly D) Board defect

<Result>

 Test Pattern **NG** or White Picture **not displayed**

<Cause>
D, SC,SU,SD Board defect

Refer to "Diagnosis (2)" on next page

SC | SU | SD | SS

<Back side view>

Test Pattern White Picture

| A | IC1100 — MICRO PROCESSOR | IC4510 — HDMI I/F | Peaks Lite | IC8001 |

LVDS | A5 | D5

| D | IC9500 — PICTURE OUTPUT | IC9900 — PLASMA AI | LVDS RECEIVER | S.F. PROCESSOR | DATA DRIVER | DISCHARGE CONTROL |

Buffer IC | Buffer IC

Video DATA (R)
Video DATA (L)

Scan Control Pulse
Sustain Control Pulse

<Defective Area>

Up to D Board → | **From D Board to Panel Drive Circuit** →

Diagnosis for Picture Problem (All Over the Screen)

<Diagnosis (2)>
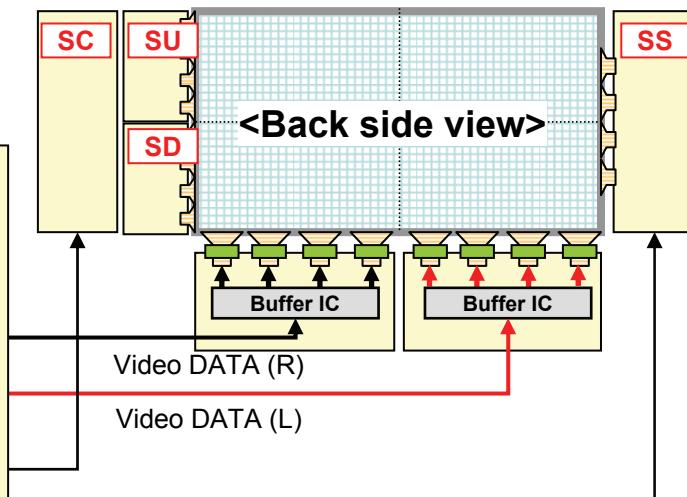
Confirm the waveform at "TPSC1" of the SC board

<Result>

Waveform **OK**

Correct Waveform

Sample of NG Waveform

<Result>

Waveform **NG**

Here

<Cause>

D Board defect

<Cause>
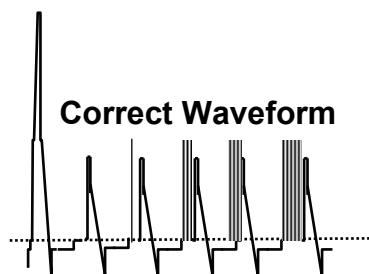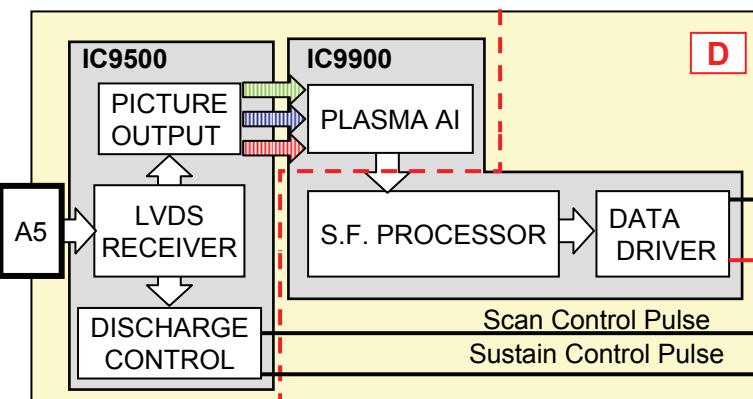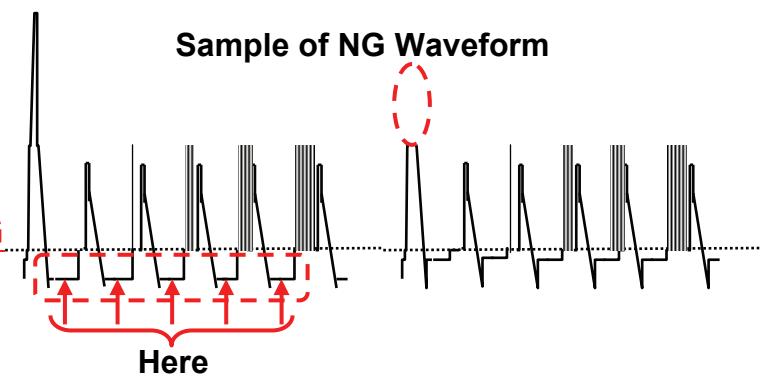
SC,SU,SD Board defect

↳ **Refer to "Diagnosis (3)" on next page**

TPSC1

SC | SU | SD | SS

<Back side view>

IC9500
- PICTURE OUTPUT
- LVDS RECEIVER
- DISCHARGE CONTROL

IC9900
- PLASMA AI

D

S.F. PROCESSOR → DATA DRIVER

A5

Video DATA (R)
Video DATA (L)
Scan Control Pulse
Sustain Control Pulse

Buffer IC | Buffer IC

<Defective Area>

Up to SC Board

Panel Drive Circuit

Panasonic ideas for life

Diagnosis for Picture Problem (All Over the Screen)

<Diagnosis (3)>

Confirm the waveform at "TPSC1" after removing the SU or SD Board from the SC Board

<Result>

Situation	Condition	Condition 2	Cause
Disconnect **SU Board** (Connect SD)	Waveform **OK?**	**Bottom half of Picture OK?**	**SU** Board
Disconnect **SD Board** (Connect SU)	Waveform **OK?**	**Upper half of Picture OK?**	**SD** Board
Disconnect **the SU and SD Boards**	Waveform **OK?**	**Screen should be black**	**SC** Board

Correct Waveform

TPSC1

SC   SU   SS

SD

<Back side view>

Buffer IC   Buffer IC

Panasonic ideas for life
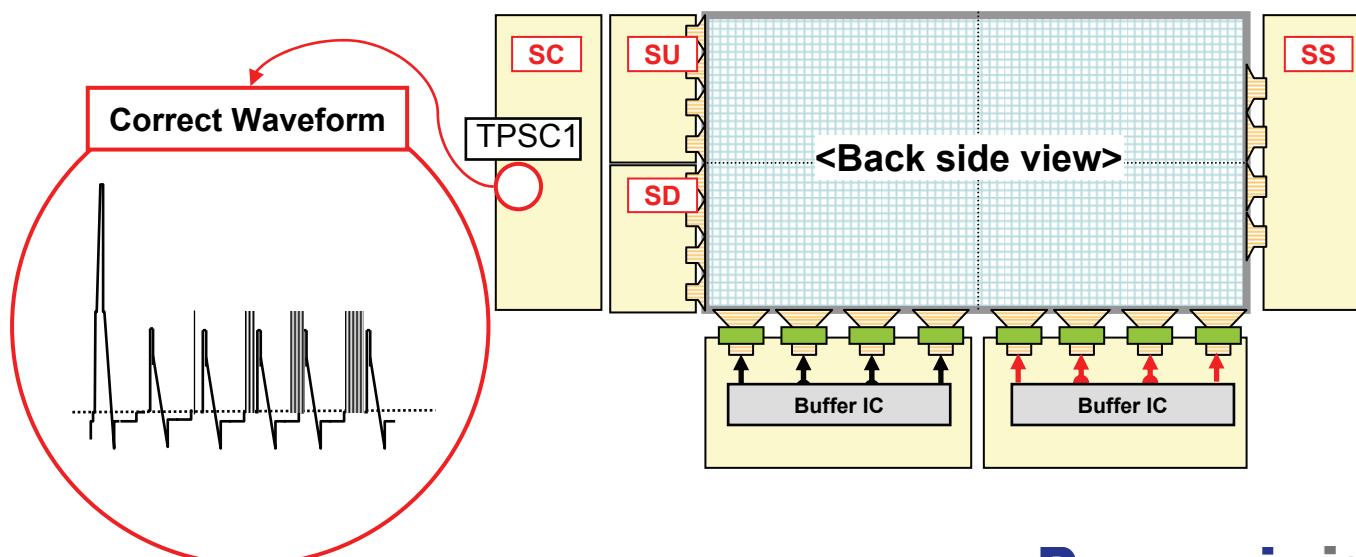
Diagnosis of Vertical Line Problem

NG Area (Front view)

Panel

case1 case2

Buffer IC C2

Buffer IC C1
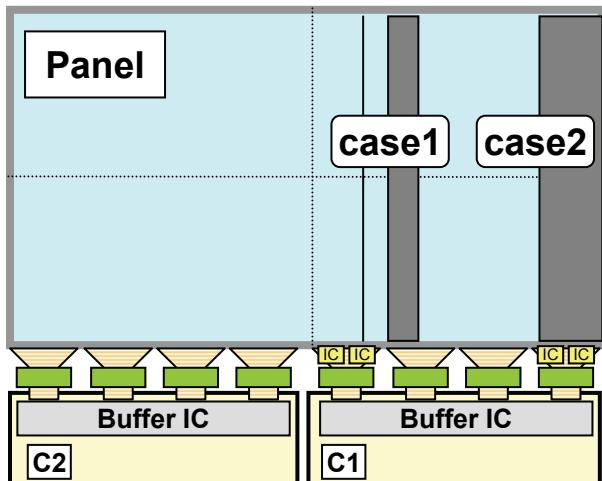
case1	case2
Thin vertical line or 1 block not lighting	**A number of blocks not lighting**
PDP panel (Driver IC) NG (or D board, or C board)	**D board (or C board) NG**

1 Line   **1 Block**

2 Blocks

PDP Panel

PDP Panel

Driver IC ❌   Driver IC ❌

Driver IC   Driver IC

FPC

FPC

Drive IC(2) inside

C Board

Buffer

C Board

Buffer ❌

or
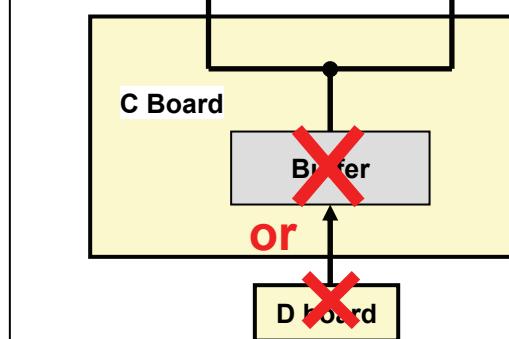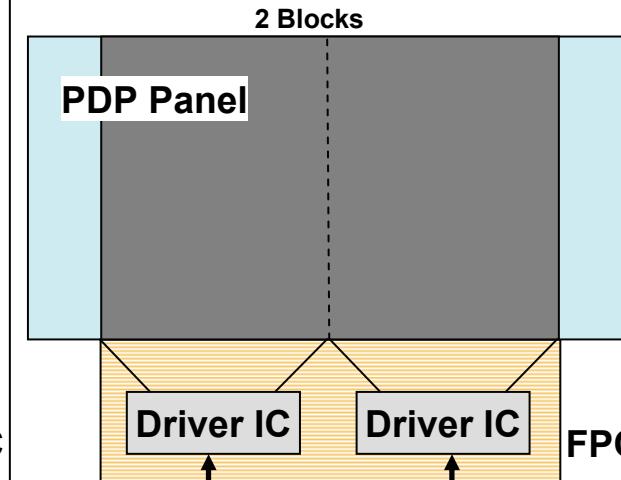
D Board

D Board ❌

Picture Trouble at Upper or Lower half

<Symptom>

No Picture, Picture noise, Full Horizontal line, etc.

<Models>

50inch (HD Panel), 42 inch (HD/SD Panel)

<NG Area>

(Front view)

SS **SU** **SC** **SD** **D** **C2** **C1**

① ②

<Defective board>
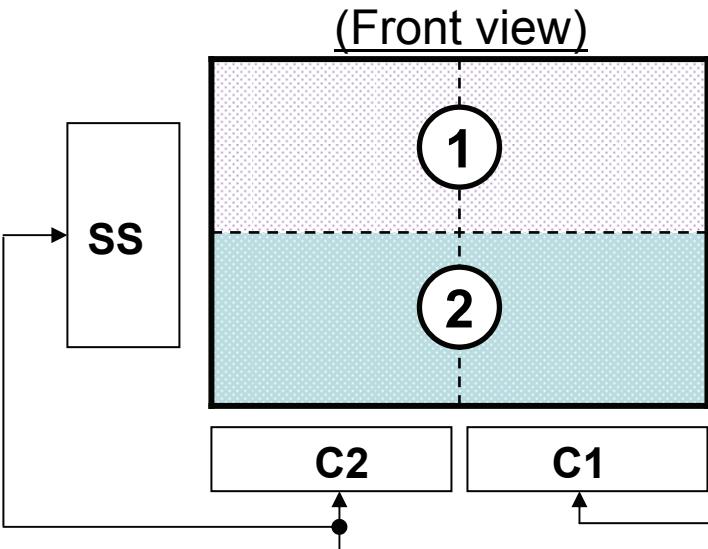
① Trouble at Upper half : **SU-board** (SC or D) defect

② Trouble at Lower half : **SD-board** (SC or D) defect

(*) Full Horizontal line at both area : **SS-board** (D) defect

<Actual Symptom>

Symptom : **Horizontal line (Lower side)**
Result : **SD board**

Symptom : **Horizontal line (Upper side)**
Result : **D board**

Symptom : **Horizontal line (Both area)**
Result : **SS board**

Panasonic ideas for life
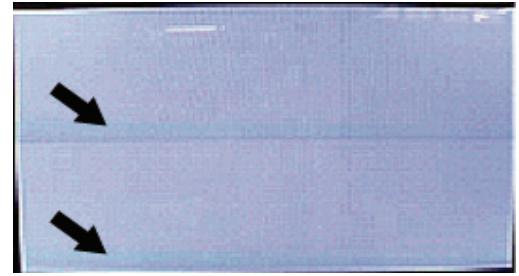
Picture Trouble at Right or Left half (50 Inch)

<Symptom>

No Picture, Picture noise, etc.

<Models>

50inch (HD Panel)

<NG Area>

(Front view)

SS2 | SS | SS3 | C3 | C2 | C1 | SU | SC | SD | D

② | ①

<Actual Symptom>

Symptom : **Cyan noise (Right side)**
Result : **D board**

<Defective board>
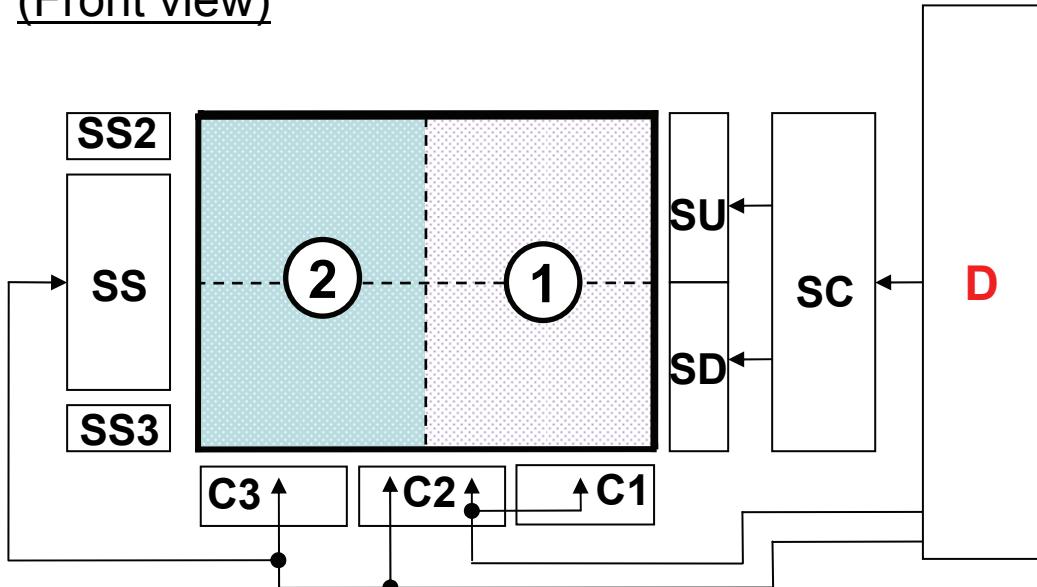
① Trouble at Right half : **D-board** defect

② Trouble at Left half : **D-board** defect

Panasonic ideas for life
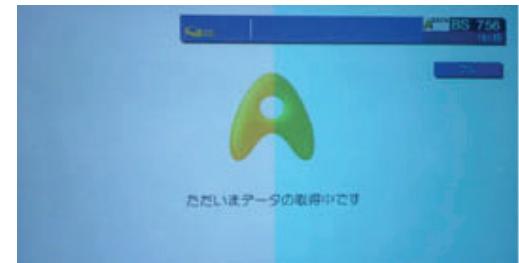
Picture Trouble at Right or Left half (42 Inch)

<Symptom>

No Picture, Picture noise, Full Vertical line, etc.

<Models>

42 inch (HD Panel)

<NG Area>

(Front view)

SS   ②   ①

SU   SC   **D**

SD

C2   **C1**

<Actual Symptom>

Symptom : **Vertical line**
Result : **Panel**

<Defective board>
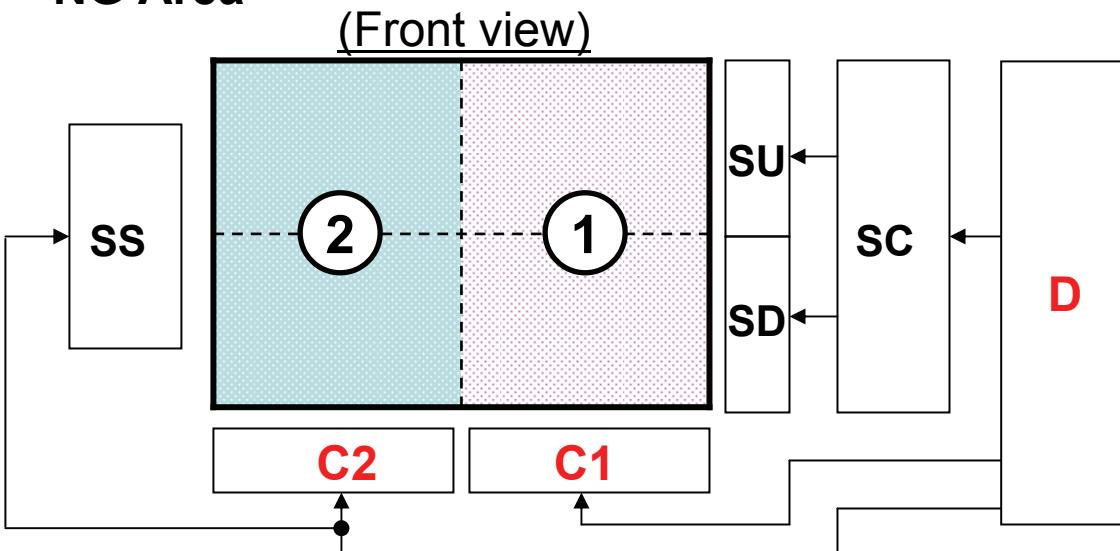
① Trouble at Right half : **D or C1 board** **(Panel) defect**

② Trouble at Left half : **D or C2 board** **(Panel) defect**

Panasonic ideas for life

\<Symptom>
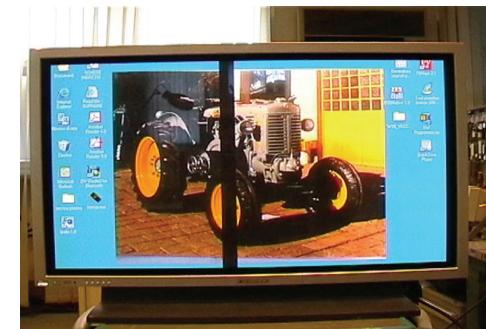
No Picture, Picture noise, Half Vertical line, etc.

\<Models>

50inch (HD Panel)

\<NG Area>

(Front view)

\<Defective board>
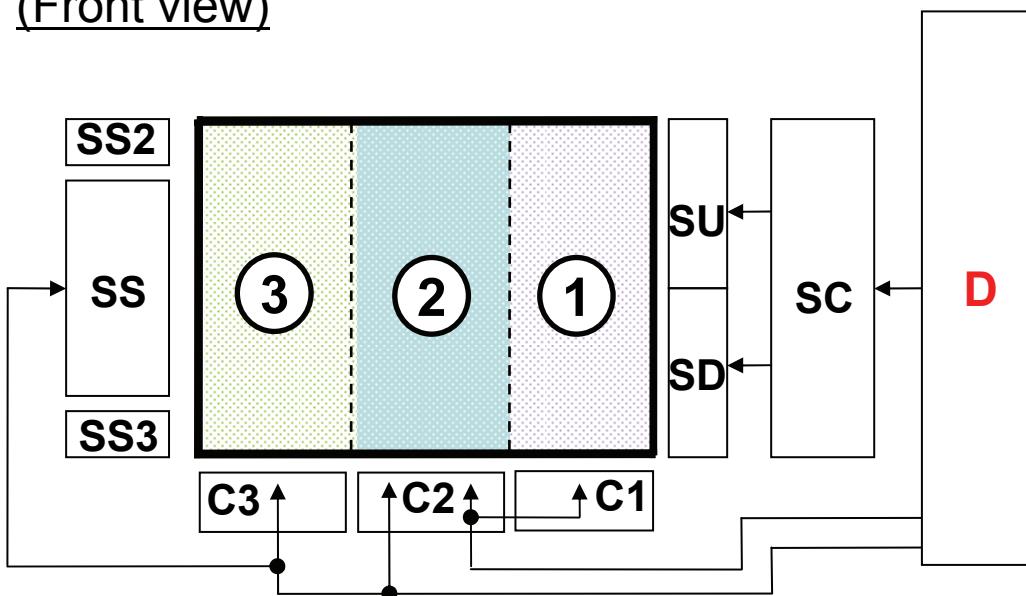
① Trouble at Upper right :
   C1 board or Panel defect

② Trouble at Upper middle :
   C2 board or Panel defect

③ Trouble at Upper left :
   C3 board or Panel defect

SS2   SS   SS3   ③ ② ①   C3   C2   C1   SU   SD   SC   D

Panasonic ideas for life

Picture Trouble all Over the Screen

<Symptom>

Picture noise, Full Vertical line, etc.

<Models>

42inch (HD Panel)

<NG Area (e.g. 42 inch Panel)**>**

(Front view)

SS   ①   SU   SC   D   A

SD

C2   C1

<Defective board>
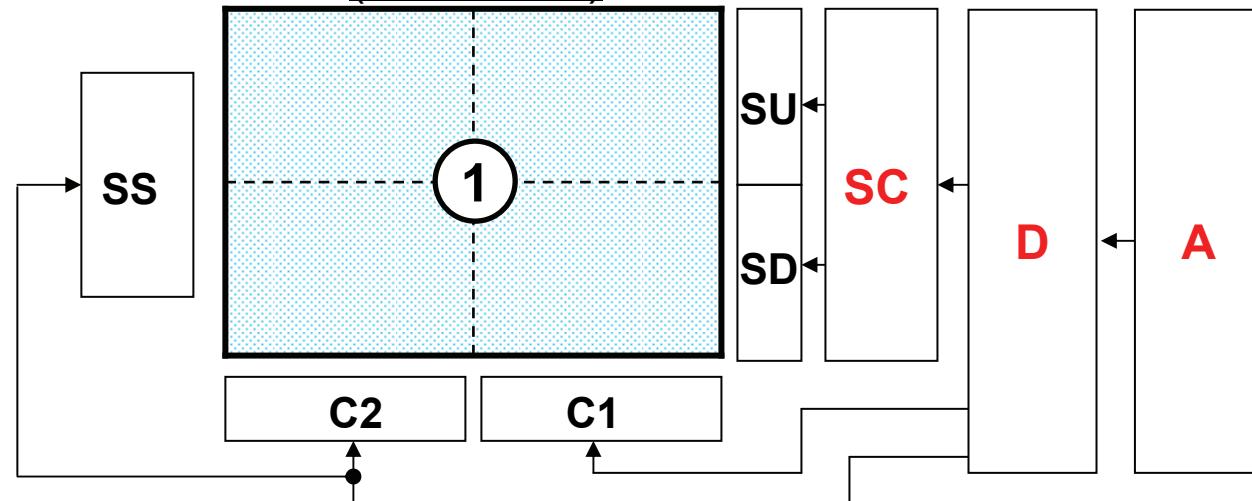
① Trouble at All area : **D or A or SC board**

(SU,SD) defect

<Actual Symptom>

Symptom : **Vertical line (All over screen)**
Result   : **D board**

Symptom : **White balance NG**
Result   : **D board**

Symptom : **Abnormal Picture**
Result   : **SC board**

Panasonic ideas for life

Examples of Symptoms and Remedies

Panasonic ideas for life

Picture Problem (All over the screen)

<Symptom> Noise Picture

<Photo of Symptom>
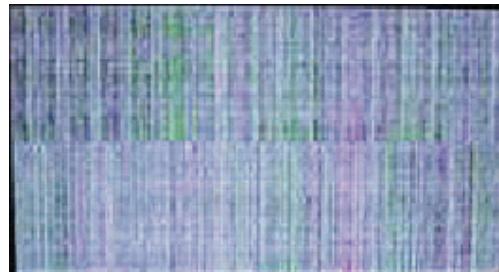
Model : 42 inch (HD panel)
Result : D Board
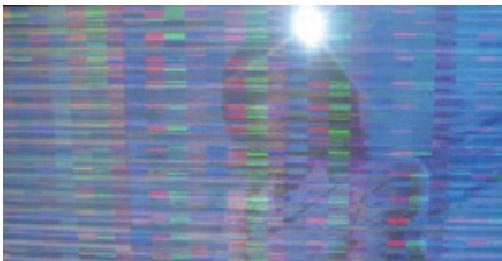
Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : A Board

Model : 42 inch (HD panel)
Result : SC Board

Model : 42 inch (HD panel)
Result : SC Board

Model : 42 inch (HD panel)
Result : SC Board

Model : 42 inch (HD panel)
Result : SC Board

Model : 42 inch (HD panel)
Result : SC Board

Panasonic ideas for life
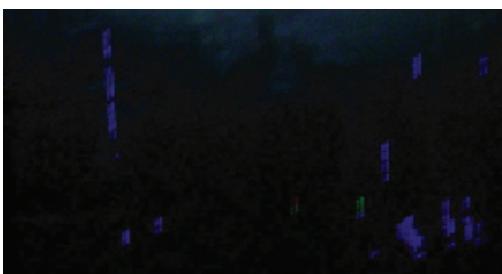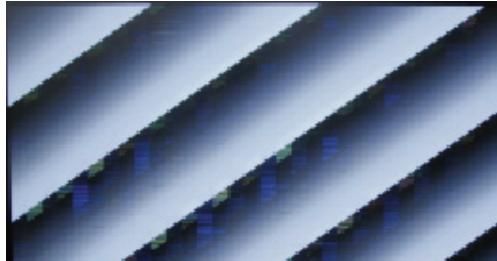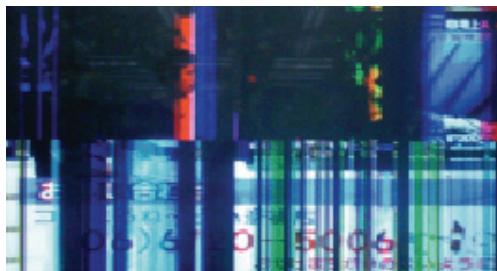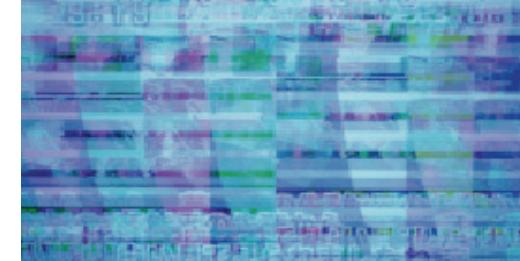
Picture Problem (All over the screen)

<Symptom> Vertical Line

<Photo of Symptom>

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : A Board
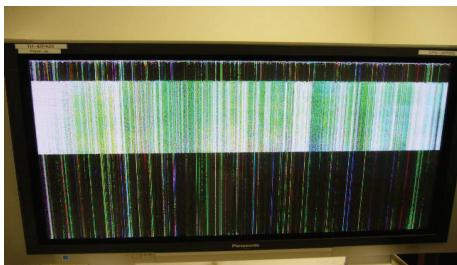
Model : 42 inch (HD panel)
Result : A Board

Model : 42 inch (HD panel)
Result : SC Board

Model : 42 inch (HD panel)
Result : SD Board

Model : 42 inch (HD panel)
Result : SD Board

Panasonic ideas for life

Picture Problem (All over the screen)

<Symptom> Abnormal Color, White Balance NG

<Photo of Symptom>

Model : 42 inch (HD panel)
Result : D Board

Yellow

Model : 42 inch (HD panel)
Result : D Board

Magenta

Model : 42 inch (HD panel)
Result : D Board

Magenta

Model : 42 inch (HD panel)
Result : D Board

Red

Model : 42inch (HD panel)
Result : A Board

Red

Model : 42 inch (HD panel)
Result : D Board

Cyan

Model : 42 inch (HD panel)
Result : A Board

Green

Model : 42 inch (HD panel)
Result : A Board

Blue

Model : 42 (HD panel)
Result : D Board

Abnormal Color

Panasonic ideas for life

Picture Problem (All over the screen)

<Symptom> Sync Error

<Photo of Symptom>

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Panasonic ideas for life

<Symptom> Vertical Line

<Photo of Symptom>

Model : 50 (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Panasonic ideas for life

Picture Problem (Upper or Bottom)

<Symptom> Vertical Line

<Photo of Symptom>

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : SU Board

Model : 42 inch (HD panel)
Result : D Board

Model : 42 inch (HD panel)
Result : SC Board

Model : 42 inch (HD panel)
Result : SS Board

Model : 42 inch (HD panel)
Result : SU Board

Panasonic ideas for life
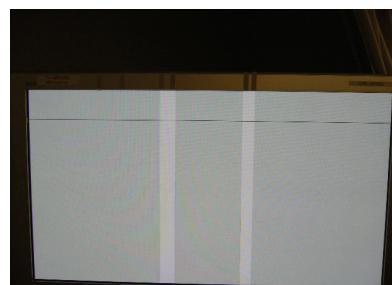
Self-check Procedure

CHASSIS: GPH10D
All models

NOTE: This procedure does

not reset the TV

How to access the self-check screen to reset the unit.

Select a television channel, and while pressing the [VOLUME (-)] button on the main unit, press the [OK] button on the remote control for more than 3 seconds.

How to Exit the self-check screen

Press and hold the Power button on the TV for 5 seconds or disconnect the AC cord from the wall outlet.

Self-check Screen

TV volume down & OK on remote only does a basic IC self check. It does NOT Reset the TV.
It does not clear channel programmed settings, picture settings, channel labels, LOCK mode settings, or password.
Using this method, it shows the unit firmware version (Peaks 1.050 and GenX 1.00) and it checks IC communications ONLY.
This is more useful to identify the firmware version without having to decode the info in the setup menu About/Version screen.

Panasonic ideas for life

Reset Procedure

CHASSIS: GPH10D
All models

To Reset the Unit, turn the TV on and while pressing the "VOLUME (-)" button on the main unit, press the "Menu" button on the remote control for more than 3 seconds. The Self-Check menu appears on screen. Then, disconnect the AC cord from the wall outlet.

Note: All customer programmed parameters will be erased.

Panasonic ideas for life

Item / Preparation
1. Input a white signal to plasma video input.
2. Set the picture controls as follows.
   Picture menu: Vivid
   Normal: Set
   Aspect: Full

Caution
1. First perform Vsus adjustment.

2. Confirm the voltage level of VSCN. This should be done after the adjustment of Vad which should be - 105V When Vad = -105V, Vscn voltage is 40V $\pm$4V.

Note: See the panel label for voltages that are not listed in the service manual

Driver Setup Table

Name	Test Point	Voltage	Volume	Remarks
Vsus	TPVSUS (SS)	Vsus ± 2V	R628 (P)	*
Ve	TPVE (SS)	Ve ± 1V	VR6000 (SS)	*
Vset	TPVSET (SC)	330V ± 7V	Fixed	
Vad	TPVAD (SC)	-105V ± 1V	VR6600 (SC)	
Vscn	TPVSCN (SC)	Vad+145V ± 4V	Fixed	
Vda	TPVDA (SS)	75V ± 1V, -2V	Fixed	
PFC	C446(+)(-)	396.0V±0.5V	R443 (P)	

Initialization Pulse Adjustment

1. Input a 100% White signal to the unit.
2. Set the picture controls as follows:
   Picture menu : Vivid
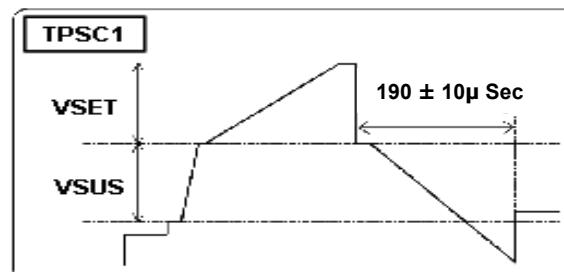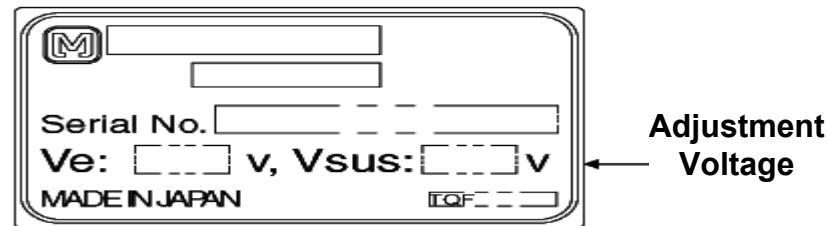   Normal : Set
   Aspect : Full
3. Connect an Oscilloscope to test point TPSC1. Using VR6602, adjust (T2) for 195+/-10µ Sec.

Panel Label

Adjustment Voltage

	Test point	Volume	Level
T2	TPSC1 (SC)	VR6602 (SC	190 $\pm$ 10µ Sec

Panasonic ideas for life

TH-50PX75U/ TH-50PX77U Driver Setup Adjustment

Item / Preparation
1. Input a white signal to plasma video input.
2. Set the picture controls as follows.
   Picture menu: Vivid
   Normal: Set
   Aspect: Full

Caution
1. First perform Vsus adjustment.

2. Confirm the voltage level of VSCN. This should be done after the adjustment of Vad which should be - 105V When Vad = -105V, Vscn voltage is 40V ±4V.

Note: See the panel label for voltages that are not listed in the service manual

Driver Setup Table

Name	Test Point	Voltage	Volume	Remarks
Vsus	TPVSUS (SS)	Vsus ± 2V	VR251 (P)	*
Ve	TPVE (SS)	Ve ± 1V	VR6000 (SS)	*
Vset	TPVSET (SC)	330V ± 7V	Fixed	
Vad	TPVAD (SC)	-105V ± 1V	VR6600 (SC)	
Vscn	TPVSCN (SC)	Vad+145V ± 4V	Fixed	
Vda	TPVDA (SS)	75V ± 1V, -2V	Fixed	
Vbk	TPVBK (SC)	155V ± 1V	VR6604 (SC)	

Initialization Pulse Adjustment

1. Input a 100% White signal to the unit.
2. Set the picture controls as follows:
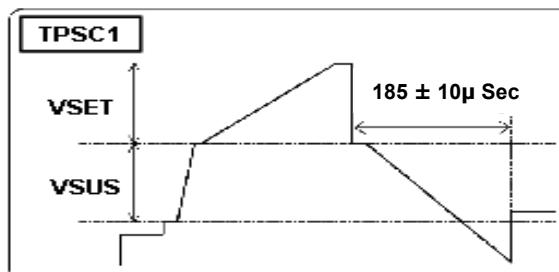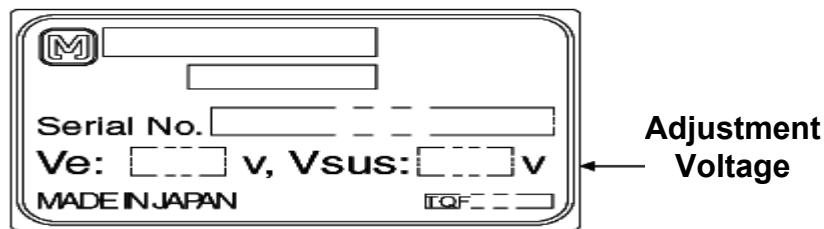   Picture menu : Vivid
   Normal : Set
   Aspect : Full
3. Connect an Oscilloscope to test point TPSC1. Using VR6602, adjust (T2) for 185+/-10µ Sec.

	Test point	Volume	Level
T2	TPSC1 (SC)	VR6602 (SC	185 ± 10µ Sec

Panel Label

Adjustment Voltage

Panasonic ideas for life

BOARD NAME	PART NUMBER	DESCRIPTION
A	TNPH0692ABS	DC-DC Converter Speaker out, Sound Processor AV Terminal, AV Switch Digital Signal Processor, Microcomputer HDMI Interface, Peaks Lite 2
C1	TXNC11HNTU	Data Driver (Lower Right)
C2	TXNC21HNTU	Data Driver (Lower Left)
D	TZTNP01LPTU	Format Converter, Plasma AI, Sub-Field Processor
P	TXN/P1HNTUS	Power Supply
SC	TXNSC1HNTU	Scan Drive
SD	TXNSD1HNTU	Scan out (Lower)
SS	TXNSS1HNTUJS	Sustain Drive
SU	TXNSU1HNTU	Scan out (Upper)
GS	TNPA4280S	SD Card Slot
K	TNPA4236S	Remote receiver, Power LED
S	TNPA4237S	Power Switch
PANEL	MD42H10A1J	Plasma Display Panel
REMOTE CONTROL	N2QAYB000103	Remote Control

TH-42PX75U BOARD LAYOUT

Panasonic ideas for life
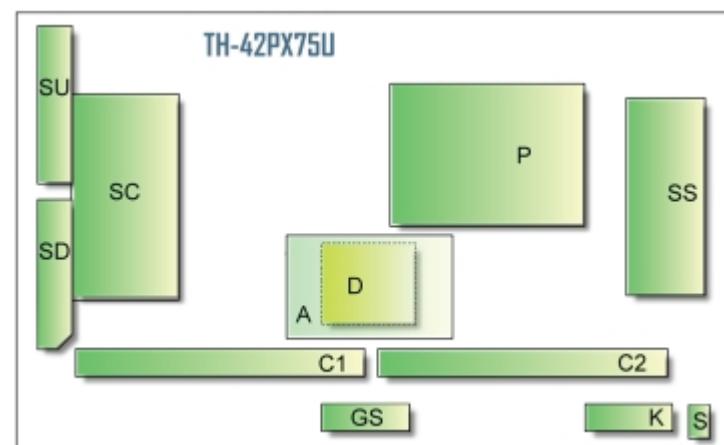
TH-50PX75U BOARD LAYOUT AND PART NUMBERS

BOARD NAME	PART NUMBER	DESCRIPTION
A	TNPH0692ACS	DC-DC Converter Speaker out, Sound Processor AV Terminal, AV Switch Digital Signal Processor, Microcomputer HDMI Interface, Peaks Lite 2
C1	TXNC11HMTU	Data Driver (Lower Right)
C2	TXNC21HMTU	Data Driver (Lower Center)
C3	TXNC31HMTU	Data Driver (Lower Left)
D	TZTNP01LNTU	Format Converter, Plasma AI, Sub-Field Processor
P	ETXMM655MEHS	Power Supply
SC	TXNSC1HMTU	Scan Drive
SD	TXNSD1HMTU	Scan out (Lower)
SS	TXNSS1HMTU	Sustain Drive
SU	TXNSU1HMTU	Scan out (Upper)
GS	TNPA4280S	SD Card Slot
K	TNPA4236S	Remote receiver, Power LED
S	TNPA4237S	Power Switch
SS2	TNPA4202S	Sustain out (Upper)
SS3	TNPA4203S	Sustain out (Lower)
PANEL	MD50H10A1J	Plasma Display Panel
REMOTE CONTROL	N2QAYB000103	Remote Control

TH-50PX75U BOARD LAYOUT

Panasonic ideas for life
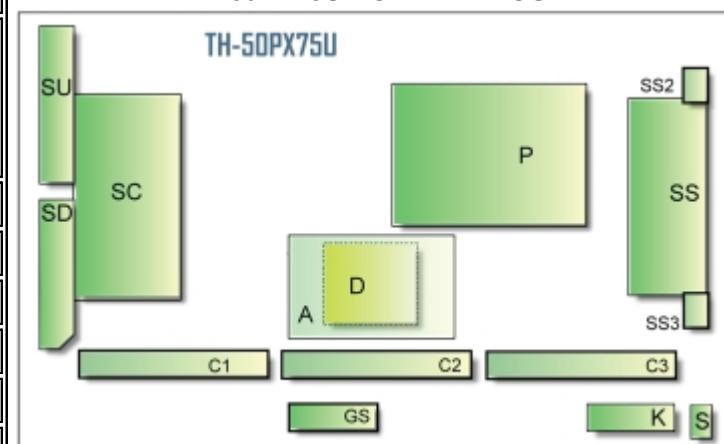
TH-50PX77U BOARD LAYOUT

BOARD NAME	PART NUMBER	DESCRIPTION
A	TNPH0692AES	DC-DC Converter Speaker out, Sound Processor AV Terminal, AV Switch Digital Signal Processor, Microcomputer HDMI Interface, Peaks Lite 2
C1	TXNC11HNTU	Data Driver (Lower Right)
C2	TXNC21HNTU	Data Driver (Lower Left)
D	TZTNP01LPTU	Format Converter, Plasma AI, Sub-Field Processor
P	TXN/P1HNTUS	Power Supply
SC	TXNSC1HNTU	Scan Drive
SD	TXNSD1HNTU	Scan out (Lower)
SS	TXNSS1HNTUJS	Sustain Drive
SU	TXNSU1HNTU	Scan out (Upper)
G	TNPA4306S	
GS	TNPA4308S	SD Card Slot
K	TNPA4307S	Remote receiver, Power LED
S	TNPA4237S	Power Switch
PANEL	MD42H10A1J	Plasma Display Panel
REMOTE CONTROL	N2QAYB000100	Remote Control

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TH-50PX77U BOARD LAYOUT AND PART NUMBERS

BOARD NAME	PART NUMBER	DESCRIPTION
A	TNPH0692AFS	DC-DC Converter Speaker out, Sound Processor AV Terminal, AV Switch Digital Signal Processor, Microcomputer HDMI Interface, Peaks Lite 2
C1	TXNC11HMTU	Data Driver (Lower Right)
C2	TXNC21HMTU	Data Driver (Lower Center)
C3	TXNC31HMTU	Data Driver (Lower Left)
D	TZTNP01LNTU	Format Converter, Plasma AI, Sub-Field Processor
P	ETXMM655MEHS	Power Supply
SC	TXNSC1HMTU	Scan Drive
SD	TXNSD1HMTU	Scan out (Lower)
SS	TXNSS1HMTUJS	Sustain Drive
SU	TXNSU1HMTU	Scan out (Upper)
GS	TNPA4308S	SD Card Slot
K	TNPA4307S	Remote receiver, Power LED
S	TNPA4237S	Power Switch
SS2	TNPA4202S	Sustain out (Upper)
SS3	TNPA4203S	Sustain out (Lower)
G	TNPA4306S	Key Switch, Side Terminal
PANEL	MD50H10A1J	Plasma Display Panel
REMOTE CONTROL	N2QAYB000100	Remote Control

TH-50PX77U BOARD LAYOUT